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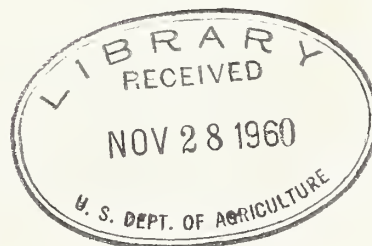




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PLANS

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3 TIMBER MANAGEMENT PLAN)
KOOTENAI WORKING CIRCLE)
KOOTENAI NATIONAL FOREST)
MONTANA & IDAHO)
REGION ONE //



U.S. FOREST SERVICE

COPY

WASHINGTON, D.C.

2410

March 21, 1960

TO: The Record

FROM: L. S. Gross, Forester

SUBJECT: Plans (Kootenai National Forest, Kootenai Working Circle)

Region 1 submitted a revised management plan for the Kootenai National Forest with memorandum of January 28, 1960.

The entire forest is considered one working circle, although previously it has been divided into three working circles. The reasons for this change are explained in the plan. Chief emphasis is placed on the flexibility of administration under which the supervisor can change the allocation of allowable cut to ranger districts as needed to meet changing conditions. This organization also charges the supervisor with the responsibility for wise use of authority so as to maintain a cutting schedule which will insure that all ranger districts are making satisfactory progress toward the sustained yield goal for the forest.

The working circle contains 1,703 M acres of commercial forest land. This is the largest acreage in any of our 400-odd working circles except Ketchikan-Craig on the Tongass. The allowable cut is summarized as follows:

	<u>Acreage</u>	<u>: Sawtimber</u>	<u>: Other</u>	<u>: Total</u>
		Millions of Board Feet		
Harvest Cuts	18,220	164.0	71.6	235.6
Intermediate Cuts	15,485	21.5	2.4	23.9
Total	33,705	185.5	74.0	259.5

The plan contains considerable discussion of current and anticipated growth. I understand from the tabulation on page 52 ^{1/} that the sawtimber growth for the 10-year period covered by the plan is estimated to average 114 board feet per acre per year, which is the same as the realizable growth per acre under management. Total realizable growth is estimated at about 20 MM feet more per year than growth in the current decade, if the existing nonstocked acreage is reforested.

This plan (excluding the appendix) covers 129 ^{2/} pages. This is entirely too long for an acceptable working tool. It describes the conditions and problems of the forest satisfactorily, in fact, in considerable detail. The allowable cut developed in the plan and the other prescriptions of the plan should be satisfactory for current guidance. I suggest, however, that

^{1/} Page 36 in this reproduction.

^{2/} 85 pages in this reproduction.

the Region have prepared a brief summary of the plan prescriptions which can be furnished each of the rangers concerned with its administration. This should be of material benefit in using the plan as it should be used.

There are many points which should be given serious consideration when the plan is next revised. Most of these are covered by my memorandum of March 11, which contains many suggestions for improving the quality of Region 1 timber management plans. For that reason, these various points will not be listed in detail in this review.

From the standpoint of record keeping, the small areas of this working circle which are in Idaho introduce complications. To facilitate record keeping by States, I suggest that the several compartments which now straddle State lines be split along the State line, even though a political subdivision ordinarily is not recognized as a desirable compartment boundary. This would not necessitate renumbering compartments. Compartment 60, for example, could be split into 60 A (Montana) and 60 B (Idaho).

This plan contains a number of pen and ink corrections. Some pages (such as 59 ^{1/}) apparently have been retyped. There is a sentence about the middle of this page "Generally residual stands will not be reduced below 60 sq. ft. of basal area per acre nor other types below 70 by intermediate cutting" which is unintelligible. Apparently there has been an omission of the type to which the 60 sq. ft. factor applies.

Page 46 contained so many corrections that I had it retyped in this office.

The Division of Pest Control commented favorably on the provisions of the plan relating to disease and insect control problems.

Land Adjustments noted that the big right-of-way problem was mentioned in the plan but not discussed in detail. I am sure that the regional office and the supervisor are alerted to the need for advance planning so that rights-of-way may be obtained in time to permit continued and timely development of the road system on the working circle.

The plan is scheduled for revision in 1967. Unless further major changes occur, it should be a satisfactory guide for timber management activities on the working circle for the next 7 years.

I recommend approval.

/s/ L. S. GROSS

1/ Sentence deleted in reproduction

FOREST SERVICE

COPY

MISSOULA, MONTANA

2410

January 28, 1960

TO: The Record

FROM: John R. Castles, Forester

SUBJECT: Plans (Kootenai Working Circle,
Kootenai National Forest)

I have reviewed the timber management plan for the Kootenai Working Circle of the Kootenai National Forest.

This plan considers the entire Kootenai Forest as one working circle. It contemplates block control of the allowable cut with any required shift of cut between blocks subject to approval by the forest supervisor. Blocks as set up now in the plan are in accord with proposed district boundaries now being recommended by the forest, following a proposal to add an additional district. Whether or not this proposal will be approved is not known at this time. However, since all area and volume data are compiled on a compartment basis, any approved district boundary shift requirement can be adjusted locally within the authority of the forest supervisor if this plan is approved.

The unit encompasses a total gross national-forest area of 1,804,953 acres of which 1,703,150 acres are nonreserved national-forest commercial forest area. On this national-forest commercial forest area are 10,979 MM b.m. of sawtimber and 17,127 M cords of other products (5"-11" d.b.h.).

The inventory in this plan meets the standards to which the present regional effort is directed. It computes to a statistical accuracy of plus or minus three percent for the total cubic volume, based on one probability.

The plan provides a regulated allowable annual harvest cut of 164 MM board feet of sawtimber and 215,000 cords of other products (5"-11" d.b.h.) in harvest cuttings. In addition, the plan provides for an intermediate cut of 21.5 MM board feet of sawtimber-sized material and 71,000 cords of other products (5"-11" d.b.h.). Little intermediate cutting is now being accomplished in the working circle.

The sawtimber allowable harvest cut amounts to 1.5 percent of the total sawtimber volume. The total annual allowable harvest cut, including other products (converted at 3 cords per M), amounts to 138 board feet per acre based on total national-forest commercial area; intermediate cuts add an additional 26 board feet per acre. The new level of sawtimber allowable cut is nearly double the cut of the plans for the same area set in the late 1940's (164 MM versus 85.8 MM). This increase has been prescribed despite the heavy losses which occurred from the spruce bark beetle catastrophe. I understand that the rangers now administering the forest think the present prescribed cut is much more realistic than the previous interim cut of 118.5 MM or the original approved cut of 85.8 MM.

The Kootenai National Forest is characterized by a rather high (66 percent) proportion of area of sawtimber much of which is far past rotation age. While many miles of main-haul access roads were built into many major drainages during the recent spruce bark beetle control program, there is still a tremendous area not yet accessible. For example, the Callahan Creek drainage with over 500 MM board feet of sawtimber still is not accessible for logging.

The forest has large areas of young growth which should be placed under an active management program as soon as practicable, if future productivity is considered.

Part of the allowable cut cannot be developed from desirable portions of the forest because of rights-of-way problems as in the Fisher River drainage. Also, until a satisfactory solution is found to resolve the Fisher River wildlife problem, the allowable cut will have to be made in other overmature stands. This, of course, is one advantage of a large working circle in that flexibility is available to bridge problems of this nature until a satisfactory solution can be found.

How soon the available small material can be fully utilized is not yet known. Stud mills are now rapidly using logging residuals down to 4" tops and 1.5 M board feet per acre. Although construction of a pulp mill near Libby was announced some time ago, this may not materialize for some time to come but it will come.

The inventory shows a tremendous volume (5.7 million cords) of salvage material. Although a large portion of this is in the spruce type (1.8 MM cords), the larch--Douglas-fir type has about 2.7 MM cords. Such salvage is perishable and should be utilized as rapidly as possible.

In reviewing the plan, I find that it is somewhat lengthy. However, the working circle covers a tremendous area. I agree with the forest that it is more logical to administer the unit as one working circle than to try to break it into several units; because most problems are common and the transportation and marketing pattern stems from the principle hub of the Libby-Troy area.

I find that the forest has followed the prescribed outline and regional guidelines in preparing the plan. In my opinion, the plan appears technically sound. It is well written. Therefore, I recommend that it be approved by the region.

/s/ John R. Castles

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TIMBER MANAGEMENT PLAN

KOOTENAI WORKING CIRCLE

KOOTENAI NATIONAL FOREST

MONTANA & IDAHO

REGION ONE

1959

A. TITLE AND APPROVAL SHEET

Submitted by /s/ Russell E. Lockhart, Forester Date May 15, 1959

Approved by /s/ Robert H. Cron Date Sept. 25, 1959
Forest Supervisor

Approved by /s/ W.H. Johnson Date Feb. 5, 1960
Acting Regional Forester

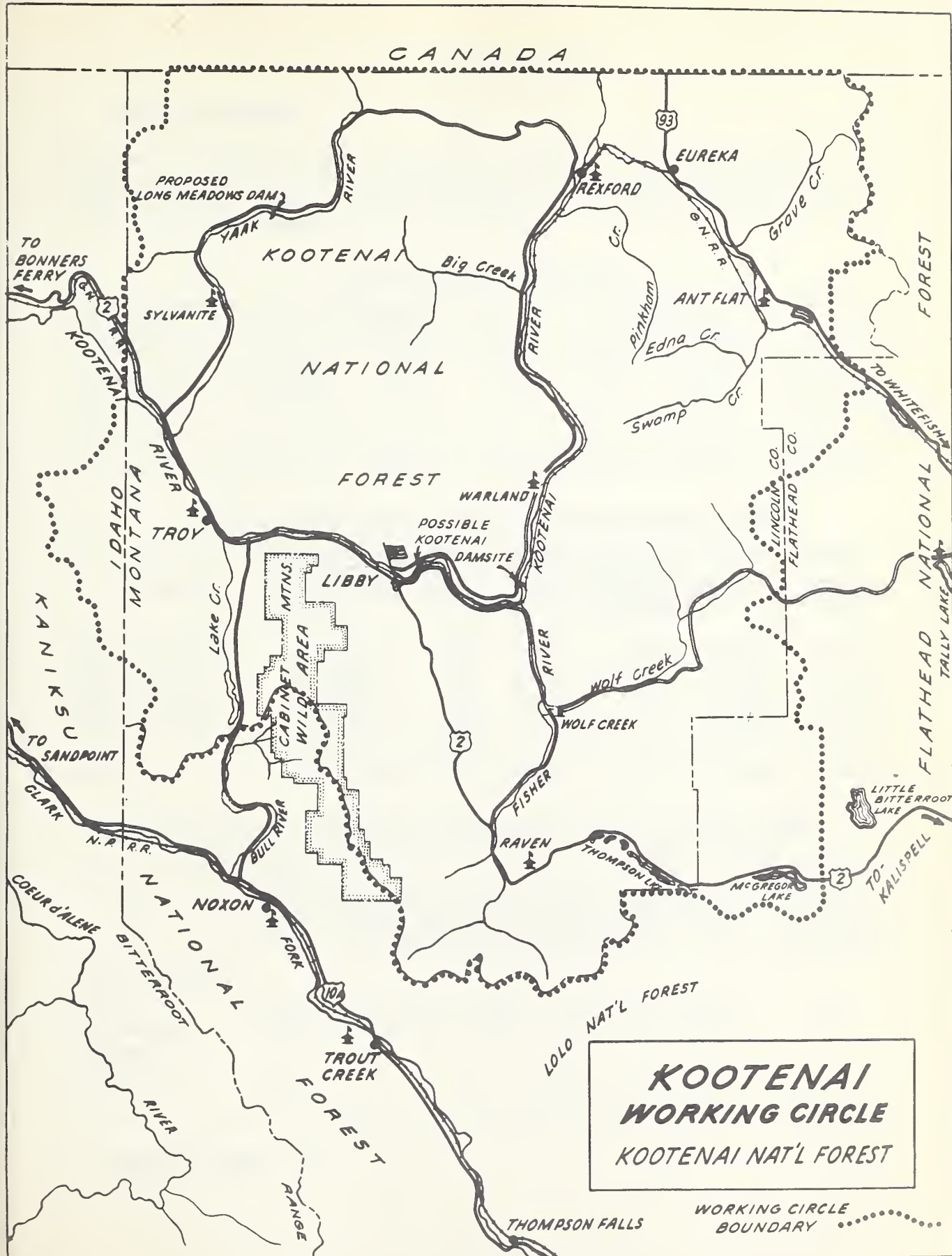
Approved by /s/ Edward P. Cliff Date April 26, 1960
LSG Acting Chief, Forest Service

Reviewed by:

DIVISIONS	NATIONAL FOREST ADMINISTRATION			
	Regional Office		Washington Office	
	Initials	Date	Initials	Date
Timber Management	/s/ JRC WHJ	2/ 5/60	/s/ HJH	3/21/60
Recreation and Lands	/s/ EFB	1/25/60	/s/ JS	2/15/60
	/s/ MAG	1/25/60	/s/ FCC	2/17/60
Range & Wildlife Mgt.	/s/ VNS	1/25/60	/s/ LWS	2/17/60
Watershed Management			/s/ WLS	2/24/60
Fire Control	/s/ DRK	1/22/60	/s/ MSL	2/26/60
	/s/ WLM	1/25/60		
Engineering	/s/ HRW	7/ 9/59	/s/ C.T.Sullivan	3/7/60
State and Private	/s/ HJH	1/22/60		
Pest Control			/s/ WVB	3/15/60

RESEARCH

	Intermountain Forest and Range Exp. Station		Washington Office Branch of Research	
	Initials	Date	Initials	Date
Forest Mgt. Research	/s/ CAW	7/ 6/59	/s/ RDL	3/16/60
Forest Insect Research	/s/ DEP	7/ 9/59		
Forest Disease Research	/s/ JWK	7/2/59		



C. SUMMARY OF PLAN

1. AREA AND VOLUMES

Kootenai Working Circle covers Kootenai National Forest with eight proposed ranger districts or blocks located in northwestern Montana, mostly in Lincoln County, with some land in Flathead and Sanders Counties, Montana, also Bonner and Boundary Counties, Idaho.

GROSS NATIONAL FOREST AREA

National Forest Land	Montana			Idaho		Total
	Lincoln	Flathead	Sanders	Bonner	Boundary	
Nonreserved	1,656,979	52,762	1,448	36,074	10,631	1,757,894
Reserved	47,059	-	-	-	-	47,059
Total	1,703,938	52,762	1,448	36,074	10,631	1,804,953

COMMERCIAL FOREST AREA AND NET VOLUME FOR WORKING CIRCLE

Ownership	Forest Land	Sawtimber Volumes				Other
	Commercial	Pine	L-DF	Other	Total	Products
	Acres	- - -	MM b.m.	(Scribner)	- - -	M cords
National Forest	1,703,150	2,665	5,533	2,780	10,979	17,127
State (Montana)	42,636	84	167	22	273	328
Ind. Private	292,090	652	1,157	169	1,984	2,620
Other Private	147,347	186	395	80	661	1,164
Total	2,185,223	3,587	7,252	3,051	13,897	21,239

2. ANNUAL ALLOWABLE HARVEST AND INTERMEDIATE CUTS AND CUTTING AREAS

Annual Cut	Annual	Volumes by Species Group (Sawtimber)						Other
	Cutting	WP-PP	LPP	L-DF	C-H-GF	S	Total	Products
	Area	- - -	MM	Board	Feet	(Scribner)	- - -	All Species
	Acres	- - -	MM	Board	Feet	(Scribner)	- - -	M Cords
<u>National Forest</u>								
Harvest Cut	18,220	19.7	20.9	80.3	16.9	26.2	164.0	215
Intermediate	15,485	1.0	4.3	11.0	1.6	3.6	21.5	71
Percent of Inventory	1.1						1.4	1.2

3. REVISION DATE: 1967

D. MANAGEMENT PLAN

1. SUMMARY OF RESULTS UNDER PREVIOUS PLANS

Under the previous management plans the forest was divided into three working circles--Troy, Libby, and Tobacco River. The most recent plan, combining the Libby and Troy Working Circles as a sustained yield unit, was prepared in 1946 and approved by the Chief in 1947.

A management plan for the Tobacco River Working Circle was initially prepared in 1948 and finally approved with revisions by the Chief in 1952.

The allowable cuts for national forest timber as established by these two plans were as follows:

Working Circle	WP	PP	S	L-DF	Other	Total Saw Logs	Convertible Products	Total Volume
----- MM Board Feet -----								
Libby-Troy	6.4	6.0	14.2	26.7	3.0	56.3	14.5	70.8
Tobacco River	-	-	4.0	8.0 ^{1/}	-	12.0	3.0 ^{2/}	15.0
Total	6.4	6.0	18.2	34.7	3.0	68.3	17.5	85.8

^{1/}Includes minor unestimated volume of ponderosa pine.

^{2/}Estimated, but not regulated.

In consideration of the urgent need for an accelerated cutting program during the spruce beetle emergency, the cutting objective for C.Y. 1957 for the Kootenai National Forest was established by the regional forester (R-1 Timber Business Report dated April 8, 1957) as 251 MM board feet. During 1957, the Chief directed the region to reanalyze the allowable cuts on a working circle by working circle and a forest by forest basis from the best available information, and to establish interim cutting regulations to follow until the reinventory work and the present timber management plan could be completed.

As a result of this analysis, the interim allowable cut for the working circle was established at 135 MM board feet for sawtimber and 50 MM board feet for convertible products less than 11" d.b.h. without species regulation.

Compliance with allowable annual cut regulation by species and the influence of the spruce bark beetle epidemic can best be shown in the following summary. A more detailed table appears in the Annual Cut Section under Supporting Data - Economy.

CUT RECORD FOR TEN-YEAR PERIOD
C.Y. 1949 to 1958

National Forest Lands

Species	Cut Volumes		
	Total	Average	Total
	Sawtimber	Annual	Sawtimber
	- - - M Board Feet - - -	- - -	Percent
White Pine	59,017	5,902	4.5
Ponderosa Pine	53,245	5,325	4.0
Larch--Douglas-fir	419,662	41,966	31.8
Spruce	710,043	71,004	53.9
Other	76,729	7,673	5.8
Subtotal Sawtimber	1,318,696	131,870	100.0
Convertible Products (M bd. ft. basis)	56,161	5,616	
Total	1,374,857	137,486	

The average annual cut of pines for the ten-year period closely agrees with the prescribed limitation established by the 1947 management plan. The cut of spruce has been exceeded by 52,800 M board feet on an average annual basis. By reason of the bark beetle epidemic, larch and Douglas-fir have likewise been overcut by an average of 7,300 M feet b.m. per year, and the other species by lesser amounts. While these seeming overcuts of species other than pine were substantial, their total effect on the allowable cut from the working circle and on the economy of the area has not been detrimental. Recent information has shown that the inventory data on which the 1947 plan was based was very conservative and that the allowable annual cut could have been much more. The annual cut of convertible products has been only one-third of the allowable volume established, and this trend may be expected to continue until a firm local pulpwood market is developed, or until more use is made of small material for lumber and dimension. The present cut of convertible products, much of which is sawtimber size, consists primarily of poles and the average annual outlet for this product will not greatly exceed 6,000 M board feet.

2. LAND DESCRIPTION

a. Location

The working circle is situated in the northwest corner of the State of Montana. The area lies primarily within Lincoln County, Montana, with minor portions extending into Bonner and Boundary Counties, Idaho, on the west side and into Flathead and Sanders Counties, Montana, on the east and southeast side. Over 90 percent of the land area within the working circle is drained by the Kootenai River and its tributaries. Gross area of nonreserved national-forest land by state and county is as shown:

	Montana			Idaho		Total
	Lincoln	Flathead	Sanders	Bonner	Boundary	
Nonreserved N.F. Area	1,656,979	52,762	1,448	36,074	10,631	1,757,894 ^{1/}
Percent of Total	94	3	-	2	1	100

^{1/}Cabinet Wild Area (47,059 acres) not included above.

b. Boundaries

The boundaries of the Kootenai Working Circle coincide with those of the Kootenai National Forest. The north side is bounded by the Canadian line, the west boundary is common to the Kaniksu and Kootenai National Forests. The south boundary agrees closely with the Sanders County, Montana line, and the east side is bounded by the Flathead National Forest and the Stillwater State Forest.

The boundary of the working circle has been established to conform with that of the forest for the following reasons:

(1) Overall management is simplified, if the administrative and management boundaries coincide.

(a) Duplication of reporting and record-keeping is eliminated.

(b) Uniform policy is more easily maintained on a broad basis.

(c) Flexibility in management is provided to meet emergencies such as insect or disease attack, fire losses, and wind damage. The effect of rapidly changing market conditions can more easily be minimized by shifting cutting operations between blocks, and coordination of offerings to attract or supply particular operations is easily obtained.

(2) The improving efficiency and speed of log transportation is constantly widening and overlapping the competitive zone of established industry.

(3) Topographically, 90 percent of the working circle is tributary to the Kootenai River. Limiting topographic features between tributary drainages are largely lacking. Timber constantly moves across one or more drainages to manufacturing centers.

(4) There is sufficient headsaw capacity in established mills and locally owned portable mills to manufacture the allowable cut of the working circle. Manufacturing centers at Libby, Troy, and Eureka are located for favorable competitive opportunity for the bulk of the timber available. It is anticipated that mills located on the periphery will continue to compete successfully for timber.

(5) Subdivision of political units, such as states and counties, has been held to a minimum for reporting purposes and political relationships. By far, the greatest portion of the working circle is contained within Lincoln County. Portions of other counties have been included where the established forest boundary has been set on topographic features.

c. Subdivisions

The working circle is divided into 8 blocks and 192 compartments. There are at present 7 ranger districts; however, in the near future the Yaak District may be subdivided to form one additional district. In addition to this change, several minor adjustments in district boundaries will also be made.

The block subdivisions (see appendix map)^{1/} are based on the planned adjustment of present boundaries. In all cases, block and district boundaries will coincide.

The 192 compartments within the working circle vary considerably in size. No changes were made in compartment delineation from those established in the earlier management plans. The initial determination was based on sound evaluation of development problems and efficient administration. Rather detailed data and records have been maintained in the past on the original compartments.

The following table shows gross national-forest area by block:

Block and District Name	Block Number	Number of Compartments	National Forest Gross Area	Percent of Total Area
Rexford	1	17	223,406	13
Sylvanite	2	17	169,558	10
Fortine	3	23	258,714	15
Troy	4	24	209,071	12
Libby	5	36	290,846	16
Fisher River	6	36	229,057	13
Warland	7	13	159,014	9
Yaak	8	26	218,228	12
Total		192	1,757,894^{1/}	

^{1/} Does not include Cabinet Wild Area (47,059 acres).

d. Relation to Other Working Circles

Prior to the spruce beetle epidemic which broke out in 1952, nearly 100 percent of the timber cut received primary or complete manufacture within the working circle. This condition changed with the need for increased logging and milling capacity to salvage beetle-killed spruce.

^{1/} Map not reproduced.

Export log markets were developed on the west side of the working circle at Moyie Springs and Bonners Ferry, Idaho, and as far west as Spokane, Washington. On the east side, considerable volumes were purchased and manufactured by established firms in Flathead County, Montana, principally in the communities of Whitefish, Columbia Falls, and Kalispell.

It is expected that the export of logs into the Flathead area will continue for as long as milling capacity and demand in that area is in excess of timber supply. This appears to be a lasting condition and competition for timber on the east side of the working circle will continue to be keen. To a lesser degree timber export to the Moyie Springs and Bonners Ferry, Idaho, communities may also be expected to continue. Up to the present the only complete manufacturing facilities, including kilns within the working circle, are located at Libby, Montana. Much of the lumber produced elsewhere in the working circle is either air dried and surfaced or shipped to outside markets in the form of rough green lumber.

Local consumption of lumber is a minor factor in the marketing of products produced within the working circle.

3. FOREST DESCRIPTION

a. Land Ownership and Land Class

The major portion of the Kootenai Forest is solidly in national-forest ownership. The areas of exception are the valley bottoms of the larger streams which have been homesteaded, and the extensive holdings of the Northern Pacific Railway, the Anaconda Company, and the St. Regis Paper Company which are scattered throughout the southern half of the forest.

The original proclamation boundaries include nearly all land presently in national-forest ownership. The Fortine Valley is an exception. Here many small isolated parcels of cutover land have been acquired.

Table 1 shows the ownership and class of land within the working circle as follows:

TABLE 1 - LAND AREA BY OWNERSHIP AND MAJOR CLASS OF LAND

Land Class	National Forest	State of Montana	Subtotal Public	Industrial		Other		Subtotal Private	Total
				Private	Area in Acres	Private	Area in Acres		
Forest Land									
Nonreserved:									
Commercial	1,703,150	42,586	1,745,736	292,090	147,347	439,437	2,185,173		
Noncommercial	25,218	596	25,814	3,288	1,480	4,768	30,582		
Reserved:									
Commercial	19,474 ^{1/}	-	19,474	-	-	-	19,474		
Noncommercial	17,348 ^{1/}	-	17,348	-	-	-	17,348		
Nonforest Land									
Nonreserved:	29,526	1,600	31,126	4,152	55,101	59,253	90,379		
Reserved:	10,237 ^{1/}	-	10,237	-	-	-	10,237		
Total	1,804,953	44,782	1,849,735	299,530	203,928	503,458	2,353,193		
1/ Reserved areas tabulated are for Wild Area only.									

^{1/}Reserved areas tabulated are for Wild Area only.

Additional special treatment areas of national-forest lands are tabulated in the following categories:

<u>Reserved or Special Treatment Areas</u>	<u>Area</u> <u>Acres</u>
Administrative Sites	1,671
Roadside Zone	1,020
Campgrounds	424
Power Line Easements and Rights-of-Way	401
<u>Total</u>	<u>3,516</u>

Timber cutting for the salvage of mortality will be practiced under prescribed rules (see Coordination With Other Uses) on administrative sites, roadside zones, and campgrounds.

b. General

Commercial forests extend from 1,800 feet in the lower Kootenai Valley to the subalpine types at over 6,000 feet in elevation. Soils and climate are generally favorable for timber production. Under modern logging methods there is little area within the working circle that is classed as nonoperable. The principal exceptions are the precipitous cliff areas bordering the Kootenai River below Rexford and those adjacent to the Cabinet Range. About 30 percent of the forest has been burned over, particularly in 1872, 1889, and 1910. Generally these areas are now satisfactorily restocked. There are, however, presently significant areas of 10-30 percent of normal stocking. Reburns of 1910 fires, or in later combinations with 1918, 1925, 1931, 1934, and 1940 fires, now account for the bulk of nonstocked area on the forest.

c. Forest Types

The working circle is characterized by the convergence of all types and species in Region One. Individual sales often include nine species of sawtimber. The current inventory differs from the original forest survey data in that present forest types are determined strictly by plurality of volume in cubic feet as opposed to the original standards which classified the pine types on a 20 percent volume or stem count basis.

TYPE REPRESENTATION IN ACRES AND PERCENT OF COMMERCIAL FOREST AREA

Type	Acres	Percent
White Pine	30,109	1.8
Ponderosa Pine	172,499	10.2
Larch--Douglas-fir	920,905	54.7
Spruce-Subalpine Fir	222,313	13.2
Cedar-Hemlock-Grand Fir	25,964	1.5
Lodgepole Pine-Whitebark Pine	310,552	18.5
Cottonwood	1,245	.1
Total	1,683,587 ^{1/}	100.0

^{1/}Does not include nonstocked acreage.

Although the combined acreage of white pine and ponderosa pine type is relatively small (12 percent), these species are important to the economy of the working circle.

It is significant that in the white pine type more than 55 percent of the total sawtimber volume is in other species, principally larch, spruce, and Douglas-fir. A similar condition is found in the ponderosa pine type where 52 percent of the total board foot volume is in other species. An apparent discrepancy may seem to exist in comparing the 58,000 acres now included in the present blister rust control program with the total indicated 30,109 acres of white pine type. The explanation is that 79 percent of the protected area is in pole-size timber, all of which does not contain a sufficient percentage of white pine to classify it as white pine type by plurality of volume, although the stocking is adequate to soundly justify blister rust control work.

The larch--Douglas-fir type occurs in fairly uniform distribution over the entire working circle and occupies 54.7 percent of the total commercial forest area in national-forest ownership. Coincidentally the larch and Douglas-fir types also contain 54.9 percent of the merchantable sawtimber volume in national-forest ownership.

The lodgepole pine-whitebark pine type is also distributed rather uniformly over the working circle. It comprises 18.5 percent of the commercial forest area in national-forest ownership but contains only 6.6 percent of the total merchantable sawtimber volume. Lodgepole pine is the principal species stocking the extensive burned areas of 1910 and earlier dates. Much of the pole, pulp, and minor convertible product inventory is contained in this type.

Whitebark pine as a type is located primarily in the Fortine Block.

The remaining major forest type is spruce-subalpine fir which occupies 13.2 percent of the commercial forest land. This type occupies the highest elevation limits of merchantable timber and is found principally at elevations between 4,500 and 6,000 feet. Although there were serious volume losses during the spruce bark beetle epidemic, the type still contains 22 percent of the total sawtimber volume. As a result of aggressive logging effort, the spruce type is now relatively well developed from the standpoint of main access roads.

The cedar-hemlock-grand fir type is located in all blocks, but the largest areas are in the Troy and Sylvanite Blocks. This type contains a high percentage of defective trees. Some sound stands of hemlock are found in the Troy Block.

Cottonwood is a streamside type of minor importance.

d. Growing Stock

(1) Area - Table 2, distribution of growing stock by types, size classes and ownership, shows some important relationships. The larch--Douglas-fir type represents 54 percent of the total national-forest area. Larch--Douglas-fir sawtimber also represents about 55 percent of the total forest saw log area. Lodgepole pine type is second with about 18 percent of total area of which only one percent is in the sawtimber-size class. Table 3, shows the distribution of stocked nonreserved commercial national-forest land by forest types, size class, and degree of stocking.

The age class data in table 4 was derived from the inventory sample; however, it has been expanded to show the approximate acreage distribution for the whole population. Based on the sample data, approximately 45 percent of the timber in the pole- and sawtimber-size classes is over rotation age.

Although sawtimber stands typically contain all age classes, the distribution is by no means normal, but leans heavily toward the older age classes. Ponderosa pine stands typically are overmature with little or no reproduction. Douglas-fir, and to a lesser degree, lodgepole pine and larch, have become invaders on pine sites. Two factors contributing to the reduction in ponderosa pine reproduction are the control of wild fire and an increase in browse damage to pine seedlings due to increasing big game populations. Direct comparison with growing stock in previous plans is difficult because of differences in inventory standards.

Stocking in this inventory is based on crown canopy density. Well-stocked stands in this working circle tend to be overly dense especially in seedling-sapling and pole-size classes. Since most of the forest area is in the medium stocked category, it is reasonable to expect these stands to put on more effective growth and to have more volume at rotation age than those classified as well stocked.

The greatest area of poorly stocked sawtimber is in larch--Douglas-fir stands. This is due primarily to large areas of two story stands with scattered overmature larch being classed as poorly stocked, yet these stands have medium stocked understory of lodgepole and larch poles.

Large areas of dense young lodgepole have been created by past fires. With improved fire control facilities and techniques, future extension of this type will be limited.

With the exception of the ponderosa pine type, other poorly stocked sawtimber stands generally have an adequate understory.

Silvicultural care must be taken in the ponderosa pine type by application of unit area control principles to create favorable seedbed, seed source, and seeding opportunity in order to secure regeneration to pine. Failure to do so will allow Douglas-fir to capture the site.

Site qualities are medium to good for lodgepole and white pine types and medium for spruce and cedar-hemlock-grand fir. Ponderosa pine, larch, and Douglas-fir sites range from medium to poor. Site quality for ponderosa pine varies inversely with latitude and longitude. The better sites are in the southeastern part of the working circle. See table 9 for site quality distribution by forest types.

Thriftiness varies with site but is generally poor. Larch particularly is often unthrifty due to the additional factor of dwarfmistletoe. Larch stands will improve in thrift with the removal of mistletoe-infected trees. The presence of pole blight in some white pine pole stands indicates a loss of thrift.

(2) Volume - Volume in primary growing stock is shown in tables 5, 6, and 7, and in appendix tables 3a through 3k. Table 5 shows volumes for trees 11" d.b.h. and larger. A total 10,979 MM board feet + 329.4 MM board feet (or 3 percent for 1 S.D.) are estimated to exist on all nonreserved national-forest lands. This is more than twice the volume shown in previous inventories. The increase is attributed to differences in inventory standards and some increase in area of the working circle. Table 6 is a further breakdown of merchantable area, board foot and volumes by types. Volumes by species rank in the following order: larch, Douglas-fir, spruce, and lodgepole pine.

The volume of sawtimber on other ownerships is estimated to be 2,918 MM board feet. This compares with 1,718 MM board feet in previous estimates.

Table 7 shows sawtimber volume and species distribution by ranger districts. Statistically this breakdown is less accurate than for the whole working circle, but is of value for administrative purposes.

The inventory also shows volume in terms of cubic feet for the two separate portions of growing stock--that in pole-size trees between 5" and 11" d.b.h. and that in sawtimber trees 11" d.b.h. and over. Cubic volume in sawtimber trees appears in appendix table 4 and the same information for pole-size trees is shown in appendix table 4a. Both tables indicate volumes inside the bark, between a one-foot stump and a four-inch d.i.b. top. Tables of cubic volumes for sawtimber and pole trees on State lands, industrial private and other private appear in appendix tables 5, 5a, 6, 6a, 7, and 7a, respectively.

Appendix table 4a probably has greater practical use than the other cubic volume tables, since it indicates volumes in small trees under sawtimber size. Much of this volume will likely be available for utilization as pulpwood, poles, and miscellaneous forest products. Not all of the pole volume is actually available for cutting. Pole-size trees in mature stands ready for harvest are available, assuming a clear cutting silvicultural practice. Likewise, thinnings and intermediate cuttings in immature stands, given a market, will also contribute significant volumes. Appendix tables 3 and 4a represent practically all of the stand--the sawtimber in board feet (Scribner) and pole-size timber in cubic feet.

The present volume of growing stock is far short of what is desirable. Stocking of sawtimber stands is roughly estimated to be 50 percent of normal. Assuming present age and size class distribution to be satisfactory and desirable stocking to be 70 percent normal, the total volume could be about 5.9 billion cubic feet, or about 51 percent greater than at present. Comparison of average acre volume, appendix table 2, with yield tables can be used to gauge present deficiencies.

In addition to merchantable green material, there are almost 6 MM cords of salvable dead and cull material on national-forest lands, and something over a million cords on other ownerships that can be utilized as market conditions permit. Much of this volume can be used only for fuelwood or low-value pulpwood. However, a significant amount of this dead material is Engelmann spruce which was killed within the past five years. Older spruce beetle-killed timber is rapidly deteriorating as suitable pulpwood. Present volumes of dead material should gradually decrease with a decline in spruce beetle activity together with removal by salvage logging operations. Table 8 shows the inventory volumes of salvable green cull and dead material by ownerships and forest types.

e. Timber Quality

An approximation of the average quality of the sawtimber in the working circle is available from the inventory data. On inventory plots, one sawtimber tree in each 2" diameter class was log graded in accordance with "Field Instructions for Forest Inventory - Rocky Mountain Area" (1957).^{1/} These log grades have been summarized as follows:

SANTIMBER VOLUME AND PERCENT OF VOLUME BY SPECIES AND LOG GRADE

Species	Log Grade								Total	
	1		2		3		4			
	Volume MM b.f.	Per- cent	Volume MM b.f.	Per- cent	Volume MM b.f.	Per- cent	Volume MM b.f.	Per- cent	Volume MM b.f.	Per- cent
WP	105	21	165	33	229	46	-	-	499	100
PP	203	23	203	23	195	22	283	32	884	100
LPP	64	5	141	11	769	60	308	24	1,282	100
L	850	26	719	22	687	21	1,013	31	3,269	100
DF	45	2	566	25	1,132	50	521	23	2,264	100
GF	-	-	-	-	605	86	99	14	704	100
H	4	2	2	1	138	75	41	22	185	100
C	23	12	30	16	119	63	17	9	189	100
S	50	3	202	12	1,010	60	421	25	1,683	100
Total	1,344	12	2,028	19	4,884	45	2,703	24	10,959	100

Species showing the highest log quality are larch, ponderosa pine, and white pine. Approximately 44 percent of the 3 species are in the first two log grades. On the average about 31 percent of the saw log volume is in the first two grades and 69 percent in the lower grades. Log qualities may be expected to vary widely from these averages in individual stands.

^{1/}Publication of the Intermountain and Rocky Mountain Forest and Range Experiment Station and Regions 1, 2, 3, and 4, U.S. Forest Service.

TABLE 2 - COMMERCIAL FOREST LAND (NONRESERVED) BY OWNERSHIP, TYPE, AND SIZE CLASS

Forest Type	Sawtimber	Pole	Seedling-Sapling	Stocked Subtotal	Non-stocked	Total	Per-cent
-----Acres-----							
<u>NATIONAL FOREST</u>							
WP	25,008	3,775	1,326	30,109	63	30,172	1.8
PP	158,727	11,571	2,201	172,499	6,000	178,499	10.5
LPP	26,804	196,550	87,198	310,552	100	310,652	18.2
L-DF	700,003	188,240	32,662	920,905	7,000	927,905	54.5
S-AF	191,412	19,425	11,476	222,313	6,400	228,713	13.4
C-H-GF	25,523	317	124	25,964	-	25,964	1.5
Cot.	981	264	-	1,245	-	1,245	.1
Subtotal	1,128,458	420,142	134,987	1,683,587	19,563	1,703,150	100.0
Percent	66.3	24.7	7.9	98.9	1.1	100.0	
<u>STATE OF MONTANA</u>							
All Types	35,922	5,165	1,008	42,095	191	42,286	
Percent	85.2	12.1	2.2	99.5	.5	100.0	
<u>INDUSTRIAL PRIVATE</u>							
All Types	234,761	47,495	7,954	290,210	1,880	292,090	
Percent	80.6	16.2	2.6	99.4	.6	100.0	
<u>OTHER PRIVATE</u>							
All Types	84,127	49,555	11,748	145,430	1,917	147,347	
Percent	56.9	33.9	7.9	98.7	1.3	100.0	
<u>GRAND TOTAL</u>							
TOTAL	1,483,268	522,357	155,697	2,161,322	23,551	2,184,873	
Percent	68.0	23.9	7.0	98.9	1.1	100.0	

TABLE 3 - STOCKED COMMERCIAL FOREST LAND (NONRESERVED) BY TYPE, SIZE CLASS AND DENSITY

NATIONAL FOREST

Forest Type	Size Classes													All Size Class Total
	Sawtimber			Pole			Seedling & Sapling			Total				
	Well	Medium	Poor	Well	Medium	Poor	Well	Medium	Poor	Well	Medium	Poor		
	Acres													
WP	11,786	12,217	1,005		1,167	59	1,131	59		136	15,466	13,443	1,200	30,109
PP	6,063	91,717	60,947		4,966	5,498	151	891		1,159	7,321	97,574	67,604	172,499
LFP	7,183	13,019	6,602		57,623	16,032	63,070	13,490		10,638	193,148	84,132	33,272	310,552
L-DF	150,916	378,732	170,355		64,962	18,239	21,536	7,869		3,257	277,491	451,563	191,851	920,905
S-AF	45,607	86,985	58,820		5,965	8,253	1,132	8,598		1,746	51,946	101,548	68,819	222,313
C-H-GF	17,321	6,489	1,713		175	-	55	54		15	17,518	6,718	1,728	25,964
Cot.	10	440	531		56	190	-	-		-	28	496	721	1,245
Total	238,886	589,599	299,973		134,914	48,271	87,075	30,961		16,951	562,918	755,474	365,195	1,683,587
Percent											33.4	44.9	21.7	100.0

TABLE 4 - COMMERCIAL FOREST AREAS BY AGE CLASSES AND FOREST TYPES^{1/}

NATIONAL FOREST LANDS

Age Class	Forest Types							Total
	WP	PP	LPP	L-DF	S-AF	C-H-GF	Cot.	
-----Acres-----								
1-20	1,326	2,201	37,198	32,662	11,476	124	-	84,987
21-40	1,775	5,000	64,805	15,365	7,425	117	132	94,619
41-60	3,275	6,571	54,115	90,383	12,000	200	132	166,676
61-80	3,203	14,444	58,965	162,239	13,555	4,558	-	256,964
81-100	1,275	14,444	44,160	88,608	16,964	3,646	200	169,297
101-120	1,275	28,888	24,505	73,545	19,984	3,646	200	152,043
121-140	650	7,143	6,760	59,367	23,980	2,735	200	100,835
141-160	4,500	-	8,970	66,456	23,981	2,735	200	106,842
161-180	3,855	14,444	4,430	95,697	25,979	1,823	181	146,409
181-200	2,575	14,444	2,214	88,608	15,987	1,823	-	125,651
200+	6,400	64,920	4,430	147,975	50,982	4,557	-	279,264
Total	30,109	172,499	310,552	920,905	222,313	25,964	1,245	1,683,587

^{1/}As determined from age-class distribution on inventory plots.

See table 9 for site class percentage distribution by forest types.

**TABLE 5 - VOLUME OF SAWTIMBER ON NONRESERVED COMMERCIAL FOREST LAND
BY SPECIES AND OWNERSHIP IN SAWTIMBER AND POLE STANDS**

Stand Size & Ownership	Area Acres	Species										Total
		WP	PP	IPP	L	M	DF	GF-AF	H	C	S	Cot.
		Board Feet (Scribner)										
Sawtimber												
N.F.	1128458	490680	855440	893638	3006866	2193248	676346	183994	186584	1608303	21213	10116312
State	35922	8599	55609	15393	80094	84231	5666	1935	2886	10519	367	265299
I.P.	234761	68807	433479	97333	524430	592789	42377	17869	27268	73627	6577	1884556
O.P.	84127	20029	80171	37546	201739	167818	16323	11472	9480	30521	8830	583929
Total	1483268	588115	1424699	1043910	3813129	3038086	740712	215270	226218	1722970	36987	12850096
Pole												
N.F.	420142	7962	28976	388010	262263	70698	27447	544	2042	74634	-	862576
State	5165	13	525	4337	2111	612	167	-	21	199	-	7985
I.P.	47495	349	4641	47066	31171	8454	3431	19	260	3883	-	99274
O.P.	49555	201	8361	39695	20543	4873	1155	117	380	1991	-	77316
Total	522357	8525	42503	479108	316088	84637	32200	680	2703	80707	-	1047151
Grand Totals												
N.F.	1683587	498642	884416	1281648	3269129	2263946	703793	184538	188626	1682937	21213	1097888
State	42095	8612	56134	19730	82205	84843	5833	1935	2907	10718	367	273284
I.P.	290210	69156	438120	144399	555601	601243	45808	17888	27528	77510	6577	1983830
O.P.	145430	20230	88532	77241	222282	172691	17478	11589	9860	32512	8830	661245
Total	2161322	596640	1467202	1523018	4129217	3122723	772912	215950	228921	1803677	36987	13897247
Percent												
Species												
N.F.	4.3	10.6	10.9	29.7	22.5	5.6	1.6	1.6	1.6	13.0	.2	100.0
	4.5	8.0	11.7	29.8	20.6	6.4	1.7	1.7	1.7	15.4	.2	

W/N.F. - National forest within the Kootenai Working Circle.

State - State of Montana within the Kootenai Working Circle.

I.P. - Industrial private within the Kootenai Working Circle.

O.P. - Other private--small private lands within the Kootenai Working Circle.
Includes land belonging to St. Regis Paper Company, Northern Pacific, and the Anaconda Company.

TABLE 6 - VOLUMES OF SAWTIMBER BY FOREST TYPE AND SPECIES IN SAWTIMBER AND POLE STANDS

NATIONAL FOREST LAND

Forest Type	Area of Sawtimber & Pole Stands	Species											Total	Other Products
		WP	PP	IPP	L	DF	GF-AF	H	C	S	Cot.			
		-M Board Feet (Scribner)												
	Acres													M Cords
WP	28783	226733	3288	7434	69723	37044	30743	37728	30828	56450	9547	509518	229	
PP	170298	19029	514261	23087	104130	390655	7608	-	4638	-	-	1063408	555	
IPP	223354	2827	-	324787	220609	77198	36350	-	-	62796	-	724567	3956	
L-DF	888243	218748	366867	602574	2520528	1723424	151616	49010	76623	322188	-	6031578	10751	
S-AF	210837	24262	-	319414	333526	28096	459134	15073	44331	1236963	-	2460799	1453	
C-H-GF	25840	7043	-	4352	20613	7529	18342	82727	32206	4540	4461	181813	183	
Cot.	1245	-	-	-	-	-	-	-	-	-	7205	7205	-	
Total	1548600	498642	884416	1281648	3269129	2263946	703793	184538	188626	1682937	21213	10978888	17127	

TABLE 7 - VOLUMES OF SAWTIMBER BY BLOCKS IN SAWTIMBER AND POLE STANDS

NONRESERVED LANDS

Block	Area of Sawtimber & Pole Stands Acres	Species											Total	Other Products M Cords
		Board Feet (Scribner)												
		WP	PP	IPP	L	DF	GF-AF	H	C	S	Cot.			
		44085	117266	174998	421420	297010	113572	9102	21462	316748	610	1516273	2283	
Rexford	206408	54052	40255	135315	259077	144520	96559	26127	21776	252374	2324	1032379	1548	
Sylvanite	139964	212872	37400	75122	503081	301594	113227	13120	19246	272871	1189	1544673	2354	
Fortine	212872	188911	120238	77379	508347	303341	127313	84860	48526	242583	9886	1667809	2089	
Troy	188911	249053	95336	170567	480526	349334	85067	25945	30308	150983	4799	1544208	2755	
Libby	249053	210328	50269	206374	379634	350530	38872	9181	18038	74155	351	1266300	2326	
Fisher R.	210328	150211	31875	153929	246158	247092	26461	3327	12903	55761	-	880835	1661	
Warland	150211	65387	43524	224608	470886	270525	102722	12876	16367	317462	2054	1526411	2111	
Yaak	190853													
Totals														
Nat. For.	1548600	498642	884416	1281648	3269129	2263946	703793	184538	188626	1682937	21213	10978888	17127	
State of Montana	41087	8612	56134	19730	82205	84843	5833	1935	2907	10718	367	273284	328	
Industrial Private	282256	69156	438120	144399	555601	601243	45808	17888	27528	77510	6577	1983830	2620	
Other Private	133682	20230	88532	77241	222202	172691	17478	11589	9860	32512	8830	661245	1164	
GRAND TOTAL	2005625	596640	1467202	1523018	4129217	3122723	772912	215950	228921	1803677	36987	13897247	21239	

TABLE 8 - SALVABLE VOLUMES IN CULL AND DEAD TREES BY OWNERSHIP AND TYPES

ALL SPECIES

Forest Type	National Forest	Other Owners ^{1/}	Total
	- - - - -	-M Cords- - - - -	- - - - -
White Pine	159	7	166
Ponderosa Pine	152	124	276
Lodgepole Pine	595	83	678
Larch--Douglas-fir	2,851	898	3,749
Hemlock-Grand Fir-Cedar	176	4	180
Spruce-Alpine Fir	1,811	51	1,862
Total	5,744	1,167	6,911

^{1/}Volume on other ownership is subject to a much greater sampling error than that on national forest since type strata were not field checked as closely. Another source of error lies in applying national-forest strata averages (volumes) to other ownership.

4. MANAGEMENT OBJECTIVES

Head saw capacity within and adjacent to the working circle is now in excess of the allowable cut in sawtimber-size (11"+ d.b.h.) trees. Little utilization is now made of material less than 11" d.b.h. in size and the "minor" species such as lodgepole pine, the true firs, hemlock, and cedar are not contributing their full potential. Considering these facts, the following objectives are established:

a. Community Stabilization

(1) Provide industry with the opportunity to obtain the full allowable cut from the working circle.

(2) Encourage establishment of industry which can be coordinated with or made supplemental to the established sawmill industry, particularly those which will utilize species, and logging and milling wastes not presently used to any appreciable extent.

(3) Encourage establishment of industry primarily based upon utilization of material below 11" d.b.h.

b. Marketing Program

(1) Program sawtimber sales to meet the more urgent silvicultural, insect and disease control, and salvage problems.

(2) Coordinate, to the extent possible, the needs of industry with the above objective.

(3) By specific offerings, encourage industry establishment or modification to utilize material less than 11" d.b.h. As a corollary, prepare offerings of our under-use species, namely; lodgepole pine, true firs, hemlock and decadent cedar.

(4) Acquaint industry annually with proposed sales programs.

c. Silvicultural

The principal production objective will be to grow the maximum amount of valuable sawtimber possible in conjunction with other land uses. In areas where uses other than timber production are dominant--such as recreational areas and developments, roadside and streamside zones, and municipal watersheds--cutting practices will be modified to conform with special established policies.

Selection of silvicultural systems to be applied to particular stands will be established after critical considerations of the following points:

(1) The objective of production of sawtimber in the harvest cut. A notable exception will be in the subclimax lodgepole pine type where convertible products will be produced.

(2) The silvicultural requirements of the principal tree species.

(3) Stand condition.

Integration of these factors will be made under the principles of unit area control. Insect risk, improvement, sanitation, salvage cuttings, and other silvicultural practices will be utilized as conditions warrant. However, since clear cutting is the preferred silvicultural practice in harvest cuts in all Kootenai Forest types, even-aged stands will be produced.

Where application of unit area control and condition class evaluation indicates select clear cutting as the silvicultural practice to be applied, further correlation will be made with the needs of watershed protection, recreational requirements, slash disposal and regeneration requirements.

(1) Larch--Douglas-fir Type - Larch is intolerant, windfirm, long-lived and a fair seed producer. It is heavily infected with dwarfmistletoe, but relatively free of insect enemies, although larch casebearer is moving toward the forest from Idaho at the present time. Larch reproduces very well upon a scarified seedbed. Its light seed makes wind distribution practical in natural regeneration up to about 12 chains from a seed source.

Douglas-fir is moderately tolerant, windfirm, and a heavy producer of seed. It is seriously attacked by Douglas-fir beetle in this area, but spruce budworm and dwarfmistletoe are presently of no economic importance on the working circle. Douglas-fir reproduces well on light duff or following logging disturbance.

The objective shall be to produce even-age stands through block and patch clear cutting because of the necessity to control dwarfmistletoe in larch and to minimize bark beetle populations by complete and timely slash disposal in Douglas-fir.

(2) Ponderosa Pine Type - Ponderosa pine is intolerant, windfirm, long-lived, and a poor producer of seed. Western pine beetle is a local insect pest of economic importance. Ips spp. must also be considered in slash disposal and in seasonal timing of stand improvement work. Rodents seriously reduce the effective seed crop, and big game heavily browse reproduction in its early years. Porcupine damage is common. A massive seed source and a scarified seedbed are essential if ponderosa is to be reproduced naturally. Fill-in planting will be required throughout the type.

Typically, Douglas-fir, larch, and lodgepole pine occur as mixed species in the type.

The objective of management shall be to produce a maximum of ponderosa pine within the type through even-age management by clear cutting of small groups.

(3) Spruce-Subalpine Fir - Spruce is tolerant, long-lived and a good seed producer. Subalpine fir is most tolerant, short-lived and has abundant seed crops. Spruce is relatively free of rot while subalpine fir suffers from serious heart rot. The type occupies very moist sites and both species are shallow rooted and thus subject to windthrow. Engelmann spruce bark beetle attacks are a continual and serious hazard to mature and overmature spruce. Both species reproduce readily on mineral soil; however, competition from brush and low vegetation becomes seriously limiting within three years following scarification.

Even-aged management will be practiced to assure windfirm stands. Seed sources will be controlled to assure a high proportion of spruce in reproduced stands. Slash disposal will be prompt and thorough to prevent population buildup of spruce bark beetles in slash.

(4) White Pine Type - The white pine type on this working circle is presently less seriously infected with blister rust than other forests in Region One. This condition is not likely to continue. As cutting of overmature stands provides good opportunity for ribes development, we can expect a high incidence of rust in plantations, natural reproduction and pole and sawtimber stands within the zone of influence of logging disturbance.

However, 83 percent of the white pine type area is comprised of sawtimber strata. Thus the problem of decadence due to over-maturity is of critical importance in acquiring a good age class distribution.

The objectives of management shall be:

Inside BRC Units

- (a) Maintain site productivity.
- (b) Bring all stands under management as quickly as possible.
- (c) Systematically establish new stands to effect an improved distribution of age classes.

Inside and Outside of BRC Units

The management possibilities presented by perfection of antibiotic treatment may revolutionize traditional concepts of white pine management. However, the objective of distributing cutting in the sawtimber strata over the first half of the rotation, while salvaging imminent losses, requires careful planning.

All cutting practices discussed in Region One Marking Guides will be utilized, where practicable, to meet the objective.

(5) Lodgepole Pine Type - This type species is generally regarded as intolerant, is usually not windfirm, and seed production is usually only fair; however, many of the cones of this working circle are nonserotinous. Reproduction on the forest floor is usually good. Dwarfmistletoe is a serious pest which must always be considered in management.

In subclimax stands, our objective shall be to grow even-aged stands containing a high proportion of mistletoe-free lodgepole. In transitional stands, lodgepole will ordinarily be logged as an intermediate cut in the management of more desirable associated species which are better adapted to the site. However, where a mixed stand is best adapted to the site, management will attempt to continue the prevailing composition.

(6) Cedar-Hemlock - These types usually occupy white pine sites. Management should therefore be directed toward restoration of white pine if blister rust protection can be provided. Where BRC cannot be provided, old growth stands shall be clear cut and burned to obtain regeneration to cedar, spruce, and larch. Young stands shall be given intermediate cuttings to remove pulp species and release cedar poles.

(7) Cottonwood - This type is of very minor importance and is usually found within streamside zones. Since streamside management

will favor tolerant species, cottonwood is expected to decrease as a component of these areas. Logging will be confined to removal of trees hazardous to the objectives of streamside management.

d. Growing Stock

(1) Build up growing stock to 70 percent of normal by the next rotation. Careful and early regeneration of cut-over areas; regeneration of understocked and nonstocked areas; adequate protection from fire, disease and insects; and attention to cutting within allowances are the principal means of attaining this objective.

(2) Attain better age-class distribution by clear cutting a portion of the mature and overmature timber each year according to prescriptions contained in the regulation section.

(3) Promote studies designed to decrease the interval between adequate seed crops, to increase the amount of seed germinating on the ground, to decrease the amount of reproduction lost to grazing animals, and to prevent mistletoe infection of reproduction.

(4) Carry out productivity and planting surveys to determine where supplemental regenerative measures are needed in order that satisfactory regeneration is attained no longer than 10 years following cutting.

5. COORDINATION WITH OTHER USES

The over-all policies and objectives of multiple-use land management will govern in conducting all timber management practices in the working circle. Requirements of each use and the benefits to be derived therefrom will be thoroughly considered and weighed in each case of conflict.

In accordance with service-wide policy, municipal watersheds will be given special consideration as to methods of logging, preservation of forest cover and road development plans. Areas of present or potential recreational value will also be given special consideration.

a. Recreation

The Kootenai Working Circle has a high potential for recreational use, although at present it is remote from population centers. Development of access roads under the spruce bark beetle program has greatly expanded the area available for recreational use. Total recreational visits to the Kootenai in 1958 were 283,000 of which 70,000 were by hunters and fishermen and 23,000 were by picnickers and campers.

Preliminary recreation plans have been completed on six of the present seven ranger districts. These plans anticipate increased recreational use due to population pressures and road development. Limited numbers

of suitable sites for recreational development are found on national-forest land along the principally traveled Highways U.S. No. 2, U.S. No. 93, and Montana No. 37. However, many potentially good sites are found on secondary forest roads in the Wigwam, Yaak Valley, Lake Creek, Pipe Creek, and Libby Creek drainages.

There are presently eleven improved recreational areas on the forest and a number of unimproved locations which are frequently used. Twenty-four additional areas are planned and will be developed as funds become available. Four summer home groups have been proposed but not yet approved.

Coordination of recreational use and timber harvest in such outstanding recreational areas as Spar Lake, Therriault Lakes, and Kilbrennan Lake requires special handling. The policy will be to reserve from cutting a shoreline strip of two to five chains except for insect infested, windthrown, safety hazardous, and dead trees which may be removed by a logging line. Similar reservations will be made around recreational developments in the lake area. No logging developments will be permitted within this strip. Slash from these salvage cuttings will be disposed of completely.

Within the view-area of the lake, cutting will be programed to remove the timber over a long period of years. Thus, cuttings will regenerate in several stories and we should avoid unsightly salvage operations which would result from attempting to hold the stands too long.

Cuttings will generally be narrow, clear cut, discontinuous strips, whose long axis follows the contour of the lake. The topography of the terrain influences the width of the strip. Thus, on steep terrain the strip would be very narrow to preserve the aspect of undisturbed forest to observers on the lake. On more gentle slopes the strips could be proportionately wider. Cuttings will be planned to provide optimum natural regeneration opportunity, and prompt fill-in plantings will be made either to insure mixed stand composition or as a supplement to natural regeneration.

Logging road developments will be planned so they will complement or supplement, but in any event not to infringe upon recreational access roads, parking areas, and the like.

However, where insect infestations, windthrow, fire or other disaster destroys or seriously threatens to destroy stands or portions of stands, they will be logged in a manner to conflict as little as possible with recreational values.

If constructed, the Libby and Long Meadows Dams will have a profound effect upon recreational values over much of the working circle. The need for roadside zones, shoreline strips, and improved areas will greatly increase. Construction of these dams does not seem imminent; therefore, modification and coordination of management plans for timber and recreation within areas adjoining these proposed reservoirs can be deferred.

Cutting practices and logging methods on improved recreational areas and areas planned for future development will be in accordance with servicewide guidelines prepared for recreational sites. These guidelines generally stress attractiveness of the area and safety rather than the usual silvicultural objectives. Cutting will be limited to the removal of dead, dying, diseased, or danger trees and to necessary clearing for additional roads or units. The same principle generally applies to the national-forest lands within the roadside zone along U.S. Highway No. 2.

Cutting in streamside zones will be limited to removal of dead, diseased, infested and high-risk trees with preservation of the original streambanks and prevention of siltation as the principal objectives. Type and size of logging equipment and special logging methods will be specified in the contract where deviations from normal practice is considered necessary. Ordinarily logging in streamside zones will be by jammer with yarding outside the strip.

At the present time, 165.79 acres have been withdrawn for recreation use; however, an additional 570.89 acres are now being processed for withdrawal.

If the proposed Libby Dam and Long Meadows Dam are constructed, modifications in present recreational plans will be necessary. See discussion under Section 10.

Cabinet Wild Area

The Cabinet Wild Area covers approximately 90,000 acres along the southwest side of the working circle. Within this working circle there are 47,059 acres with the remainder being on the Kaniksu National Forest. About 21 percent of the land within the Wild Area is barren, another 37 percent is scrubby subalpine forest, 12 percent second growth timber, and 30 percent commercial sawtimber. Much of the spruce timber on the commercial forest land within the Wild Area was killed during the recent spruce bark beetle epidemic.

A study of the boundary preliminary to the reclassification of the area under Regulation U-2 is now under way. Minor adjustments may add small areas around Granite and Gieger Lakes to the Wild Area. Little merchantable timber would be involved in such changes.

b. Wildlife

A rather serious conflict between wildlife management and timber production exists on low elevation areas used by big game for winter range. Overgrazing has damaged the browse and coniferous reproduction, particularly in ponderosa pine. The problem is most serious in the Fisher River area and involves private lands to a large extent. Other critical areas include the Dodge Creek, Poverty Flats, and the Fortine Creek drainages, each of which contains a high percentage of national-forest land. Some degree of damage can be found in all of the ponderosa pine type. Control can be exercised to some extent through proper regulation of the annual big game harvest. An experimental study to coordinate timber and browse production is under way near the Ant Flat Ranger Station and appears promising. However, in areas where the conflict is most critical, and adequate control of big game populations is lacking, fencing may be the only practical solution.

There is little conflict in summer range areas to date.

Wildlife management plans have been developed on six of seven districts and have been correlated with the other phases of land management.

c. Water

Water is a most important part of the complex forest resources. Users of other resources such as timber, forage, and minerals have an important effect on water production, and their activities must be planned to prevent damage to the watershed cover and the soil.

(1) Five communities in the Kootenai Working Circle obtain domestic water from watersheds which are wholly or partly national-forest land, and a number of streams are used by ranchers for domestic purposes and sprinkler irrigation. The headwaters of nearly all Kootenai streams originate on the national forest. These streams flow into the Kootenai River and later into the Columbia River, passing through a number of multipurpose dams before reaching the Pacific.

To control the quantity, quality and period of flow of the tributary streams, it is necessary to carefully manipulate uses affecting cover to protect watersheds from erosion. All road construction, logging methods and cutting systems will be planned to prevent damage to the water resource.

Municipal watershed plans have been completed and approved for Deep Creek (Fortine), Sullivan Creek (Rexford), and O'Brien Creek (Troy). The plan for Flower Creek, the municipal watershed for Libby, is being prepared. No cutting is planned in this watershed during this five-year period. A watershed plan for St. Clair Creek, watershed for Eureka, will be prepared before the planned sale is made. However, if the community abandons the watershed in the near future, no plan will be prepared.

The importance of full consideration of these watersheds is illustrated by the following table:

APPROXIMATE ACREAGE CONTAINED IN MUNICIPAL WATERSHEDS
WITHIN KOOTENAI NATIONAL FOREST BOUNDARIES

Community	Drainage	Ownership			Total
		National Forest	State of Montana	Private	
Eureka	St. Clair Creek	2,880	-	120 ^{1/}	3,000
Fortine	Deep Creek	9,925	-	160 ^{1/}	10,085
Libby	Flower Creek	10,400	640	-	11,040
Rexford	Sullivan Creek	10,900	-	-	10,900
Troy	O'Brien Creek	26,450	-	5,460 ^{2/}	31,910
Totals		60,555	640	5,740	66,935

^{1/}Small private.

^{2/}Mixed ownership--St. Regis Paper Company and small private.

(2) Dams are proposed on the Kootenai River above Libby, on the Yaak River below Pete Creek, and at three sites from the Yaak Falls to the mouth of the Yaak River. Thus, off-site water uses are becoming tremendously important within the working circle boundaries.

(3) Some of the individual points for consideration in coordinating timber and water use are:

(a) Evaluate the erosion potential on an individual area basis during sale planning and preparation.

(b) Specify by contract requirements the necessary controls on road construction and methods of logging to reduce erosion and siltation to a practical minimum.

(c) Exercise rigid control on location and gradient of skid roads. Perform erosion control work promptly upon completion of logging in each subdivision of a sale area.

(d) Establish reserve strips (with few exceptions) adjacent to all live streams.

(e) Develop a cutting plan to provide for natural regeneration or planting at the earliest possible date consistent with other necessary silvicultural requirements.

(f) Maintain rigid control on location of mill sets, camps, or other forms of occupancy to prevent pollution of streams.

(g) Control epidemic outbreaks of insects and diseases in early stages.

(h) Prevent logger-caused fires and escaping slash disposal fires.

(i) Confine total clear-cut area generally to 25 percent of the area of a small drainage.

d. Grazing

The livestock range resource in the working circle presently is transitory. Suitable grazing occurs only in the valley bottoms, lower open sidehills; and under more open timber stands on rolling topography. The summer range on national-forest land is important to over 100 ranch families who depend upon livestock raising to provide part of their income. During 1958, 2,678 cattle were permitted for a total use of 11,958 animal months.

A major problem is to avoid conflicting use by cattle on lands which are the only available winter range for big game, or where timber reproduction is becoming established. Livestock use can be coordinated with timber production, although livestock may have to be excluded until new timber crops become established. It is not likely that usable livestock range will increase, but rather some decrease is probable as timber cover shades out forage plants in what are now open pole-size stands.

The flowage area of the proposed dams will inundate only a minor portion of national-forest grazing land but will eliminate an appreciable amount of privately-owned land now used as hay producing land. Loss of this commensurability is not expected to substantially reduce demand for national-forest grazing.

e. Mining

(1) Although there are thousands of old mining claims in the Libby and Troy areas, there is very little activity on mining claims at the present except in the Cherry Creek area and the Zonolite Company holdings northeast of Libby. Some bulldozer prospecting has been done in Cherry Creek but on such a small scale that relatively little damage has been done to soil or timber.

(2) The mining law of July 23, 1955, and the surface rights determination program now in process should reduce the number of conflicting claims, surface rights, and rights-of-way problems. Withdrawals from mineral entry of 165.79 acres has been made for recreational areas and others are in progress, but it is not anticipated that the total area will be large.

6. REGULATION

a. Rotation

Rotations were set to agree closely with the culmination of mean annual growth in board feet (Int. 1/8 Rule) for each forest type. This is early enough in the life of each type to minimize losses from insects, diseases, etc. It is not, as a rule, sufficiently long to produce much high quality material.

TABLE 9 - SITE CLASS PERCENTAGES AND ROTATION AGES

NATIONAL FOREST LANDS

Forest Type	Site Class			Rotation Used in Plan
	Good	Medium	Poor	
	- - - - - Percent - - - - -			
White Pine	39	58	3	120
Ponderosa Pine	13	56	31	140
Lodgepole Pine	55	35	10	100
Larch--Douglas-fir	6	35	59	140
Spruce-Alpine Fir	9	49	42	130
Hemlock-Cedar-Grand Fir	15	15	70	120
Cottonwood	-	-	-	-
Average--All Types	17	39	44	134

Rotations believed to be most suitable for production of sawtimber in the various types are: lodgepole pine, 100 years; white pine, hemlock, grand fir and cedar, 120 years; spruce and alpine fir, 130 years; and ponderosa pine, larch and Douglas-fir, 140 years. Lodgepole pine stands will be managed on a 100-year rotation or less for other products. It is estimated that one-half of the lodgepole pine type--that on the better sites--will produce sawtimber, the remainder other products only. Both will be managed on 100-year rotations. The above rotations are averages. Individual stands will vary in development from the average and in susceptibility to destructive agencies, which may cause them to be harvested earlier or later as the case may be.

Present irregularity of age classes, with a great preponderance of overmature growing stock, and lack of access road facilities may force carrying many stands well beyond the rotation age in the near future. Again, it may be necessary to cut portions of a large age class before it reaches rotation age (usually not more than 20 years before), to avoid holding other portions of it unnecessarily long. There are no immediate problems in the latter respect, however.

The sites of better quality usually will be managed on shorter than average rotations and the poorer sites on longer ones. Unfitness of a species for a site or prevalence of a disease may cause a reversal of this practice, however.

The above rotations apply to stands which have received no cultural treatment or a minimum thereof. As more intensive silvicultural practices are applied in the future, it is believed the average rotational age can be lowered by a few years. (See appendix table 19a.)

b. Cutting Cycles

Except in special circumstances, as recreational areas, no cutting cycles or methods of cutting will be adopted which will lead to the production of uneven-aged stands. In this region, uneven-aged stands usually mean stands of less desirable composition.

To obtain the maximum yield from relatively dense, even-aged immature stands, repeated light cuttings are desirable, both to give residual trees more room to grow and to capture mortality which might otherwise be lost. In young stands short of rotation age, such treatments may occur as weeding, thinnings, and intermediate cuttings. In all instances the volume removed will be light--not to exceed 25 percent of the existing basal area--else reproduction of undesirable species will occur and uneven-aged stand conditions develop.

Light cuttings in older stands will be mainly to capture mortality. Not much growth response can be expected from older trees, but the interval between cuttings should coincide as nearly as possible with the period of best growth response. In ponderosa pine this is between 15 and 20 years. Repeated cuttings in such stands should be spaced accordingly.

Since insect infestations in the older stands and high risk patterns which invite them usually occur as concentrations on small areas, cuttings to remove high risk and infested trees generally will be patchwise and clear. This should result in many small even-aged stands. However, the pattern of risk or infestation will govern cutting methods for control and may not necessarily be clear and patchwise. Some infestations or some insects may be successfully combated by light risk cutting on a tree selection basis.

Intermediate cuttings may be commercial or noncommercial. As a rule, no commercial cuttings will be possible before stands reach about one-half the rotation age. Prior to that, tree sizes generally are too small to yield salable products. For the major portion of the young sawtimber acreage, intermediate cuttings can start at about 70 years and continue at about 20-year intervals until the stands are mature.

As a rule, only well-stocked stands can be given commercial intermediate cuttings. Such stands generally are overstocked and crop trees need more room to grow. The growing stock is usually deficient in medium and poorly stocked stands. Good stocking conditions should be preserved throughout the period that intermediate cuttings are in progress.

Demand for small-sized products has not been great in the past in this working circle; however, with the rapid increase in stud mills in and adjacent to the area, the demand is expected to increase. In addition, there is a strong possibility that a pulpwood market will develop locally.

Intermediate cuttings, particularly for removal of competing lodgepole pine and Douglas-fir from the yellow pine type, can and will be done under prevailing market conditions. A small pulp market is developing which, as it increases in size, will assist this program greatly. Likewise, intermediate cuts can be utilized in the white pine and spruce types to remove competing lodgepole pine, hemlock, grand fir, and subalpine fir. Since larch is a preferred peeler and power pole species, intermediate cuts will be utilized in the larch type to increase growth and quality of remaining dominant and codominate trees.

c. Growth

Estimates of growth are necessary to gauge the productivity of the present growing stock, and to indicate the allowable cut by certain regulatory formulas and methods.

Growth potentialities of the working circle are not particularly high. Except for the lodgepole pine type, site qualities generally are below average. Site qualities average midway between II and III for the white pine and lodgepole pine types; midway between III and IV for the larch--Douglas-fir, cedar, hemlock, grand fir, and spruce-alpine fir types; and below IV for ponderosa pine.

Potentials, in terms of volume, were determined with the use of normal yield tables. Normal growth in board feet is estimated to be slightly over 278 MM on national-forest lands. Realizable growth, which occurs when all age classes are in balance, and stands having about 70 percent of normal stocking, is 195 MM board feet. Both exceed the current rate of growth and are much above rates in the recent past. Growth in the past has been low due to stocking inadequacies, lack of growing stock in young sawtimber-size classes, and recent heavy mortality in spruce and Douglas-fir.

An estimate of past growth (within the last 10 years) was secured from an analysis of boring and mortality data recorded at the time of the inventory (table 10). The indicated rate was checked by the use of yield tables. Both are shown in table 11, together with growth rates for other periods.

The inventory plot data indicated a periodic annual growth rate of 102 MM board feet; yield tables--98 MM board feet. The inventory estimate is probably the more accurate of the two; however, their close agreement indicates that the growth rate within the past 10 years must have been close to 100 MM board feet. Growth of other products in pole-size trees was about 21 MM cubic feet.

TABLE 10 - PERIODIC ANNUAL GROWTH BY TYPES FROM INVENTORY PLOTS
(PAST 10 YEARS)

NATIONAL FOREST LANDS

Forest Types	Commercial	Net P.A.G.		Net P.A.G.	
	Forest Area	Per Acre	Total	Per Acre	Total
	8 & 9 Strata	Gross-Mortality	P.A.G.	Gross-Mortality	P.A.G.
	Acres	Bd.Ft.	M Bd.Ft.	Cu.Ft.	M Cu.Ft.
WP	28,783	289	8,318	67.3	1,940
PP	170,298	82	13,964	19.7	1,703
L-DF	888,243	109	96,818	38.0	33,753
S-SAF	210,837	-176	-37,107	-44.0	-9,277
C-H	25,840	211	5,452	61.1	1,586
LPP	223,354	63	14,071	45.4	10,140
Total	1,547,355	Ave. 66	101,516	Ave. 26	39,845

Current Estimate of Growth					
(With Spruce type assumed					
to be 0)					
		90	138,649	32	49,122
Future 10-Year Estimate					
(With Spruce mortality					
assumed to be 33 percent					
of gross growth)					
		Ave. 114	175,756	38	58,399

The past rate of growth is not necessarily indicative of what the current rate may be. It is even less indicative of the future. No such losses as occurred during the recent Engelmann spruce bark beetle epidemic are expected to occur again. It is imperative, therefore, to make some adjustments to the past growth rate to obtain levels of growth more suitable to the present and near future. Such adjustments are shown at the bottom of table 10.

Adjustments to obtain the current level (present) consists of assuming that all woody growth in the spruce-subalpine fir types will be balanced by the considerable mortality from (1) windthrow now occurring in the rather severely "opened-up" stands and (2) the low level of beetle infestation that still continues. If this supposition holds true, the current rate of board feet growth in sawtimber trees is about 139 MM.

A positive amount of growth in the spruce-subalpine fir types likely will follow cessation of the infestation and stabilization of the stands against windthrow. Even so, mortality may still be somewhat greater than normal for a period of time and is estimated as 33 percent for the near future period instead of a normal 20-25 percent rate. Under these conditions, growth in the near future will be approximately 175 MM board feet as indicated in table 10.

The foregoing rates of growth were used to determine the allowable cuts by two different methods; the current rate in the Austrian formula, and the future rate in the Tabular Check Method (appendix table 8b). The rate of 122.5 board feet per acre per year used in the latter instance is the rate applying to all sawtimber and pole strata of sawtimber producing acreage, in which one-half of the lodgepole type is eliminated.

**TABLE 11 - PERIODIC AND MEAN ANNUAL GROWTH RATES
FOR SAWTIMBER AND OTHER PRODUCTS**

NATIONAL FOREST LANDS

Growth (Kind, Source, and Conditions)	Sawtimber (Scribner)		Other Products	
	Per Acre	Total	Per Acre	Total
	Bd.Ft.	MM Bd.Ft.	Cu.Ft.	M Cu.Ft.
<u>Periodic Annual</u>				
<u>Recent Past</u> (Last 10 years) from inventory plots	66 ¹ / ₂	101.5	13.5	21.0
<u>Current</u> from yield tables	64 ¹ / ₂	98.4	(not estimated)	
<u>Current</u> estimated from inventory plots (with spruce growth and mortality assumed in balance)	90 ¹ / ₂	138.6	14	22.8
<u>Future 10 Years</u> estimated from inventory plots (assumed spruce mortality 33 percent of gross growth)	114 ¹ / ₂	175.8	16	24.6
<u>Mean Annual</u>				
<u>Potential</u> (normal stocking) from yield tables ³ / ₂	163 ² / ₂	278.1	23	38.9
<u>Realizable</u> (70 percent normal stocking) ³ / ₂	114 ² / ₂	195.0	16	27.2

¹/Prorated against sawtimber and pole strata of 1,547,479 acres.

²/Prorated against entire commercial forest acreage of 1,703,150 acres.

³/Tables of Yield and Mean Annual Increment of Fully Stocked Stands in Major Forest Types in Region One - 1957.

d. Cutting Methods

Cutting methods to be applied in the various forest types are covered in the Regional Marking Guides.^{1/} These guides constitute approved regional policy and should be observed closely where applicable (See also Silvicultural Objectives). However, it must be remembered that they are guides only and not a substitute for professional judgment soundly based on local conditions.

The principal cutting methods to be employed in each forest type are summarized as follows:

- (1) Larch--Douglas-fir Type - Patch or block clear cutting will be employed for harvest cuts where mistletoe is prevalent. In mistletoe free areas, other methods such as leaving of seed trees, may be used. Intermediate cuts will be made for improvement of spacing and removal of competing low-value species. Sanitation and salvage cuts will be made in advance of harvest cuts where practical. Christmas tree cutting will be used to improve spacing and composition of final crop trees.
 - (2) Ponderosa Pine Type - Condition class clear cutting in very small patches (generally not over 5 acres) embracing principals of unit area control will be the usual harvest cut method employed. However, in adjacent areas risk cuttings will be made concurrently to remove low volumes per acre of trees susceptible to insect attack. The objective will be to protect the type area as a whole from insect attack within the first cutting cycle.
- Intermediate cuttings will be made to remove competing species and to provide improvement cuttings in immature ponderosa pine stands.
- (3) Lodgepole Pine Type - Within subclimax stands, patch or block clear cutting will be the usual practice for harvest cuttings. All transitional stands shall be selectively marked in an intermediate cutting to favor the species best adapted to the site or to maintain the mixed nature of the stand.
 - (4) White Pine Type - Harvest cuts will be patch or block clear cutting coordinated with the needs of blister rust control inside BRC units. Intermediate, salvage, and regeneration cuttings may also be made under specialized conditions. (See Marking Guides.)^{1/}

Outside BRC units all methods of cutting may be employed with the objective of reserving unit areas of white pine sawtimber which have life expectancies of 20 years or more. The objective of this reservation is to carry small areas (5 acres or more) in order to distribute white pine sawtimber over the first rotation as uniformly as possible. Care must be taken to properly evaluate existing blister rust infection and protection measures available in making the decision to reserve.

^{1/}Not reproduced.

(5) Spruce-Subalpine Fir Type - Patch or block clear cutting is the preferred method for harvest cuttings. Intermediate cuts will only be employed where positive bark beetle control is assured.

(6) Cedar-Hemlock Type - Clear cut in patches or blocks and convert to white pine if blister rust protection can be provided.

Supplementing the timber management plan covering in detail the cutting methods to be applied in each specific area, will be detailed plans directing action in each compartment receiving intensive use or where such use is intended. Detailed planning for a compartment will include (1) a cutting plan for each stand budgeted for cutting; (2) the access road system required; (3) logging, T.S.I., soil erosion, and slash disposal methods to be used; (4) blister rust control and planting schedules to follow, if needed; and (5) measures to apply in case of special problem areas. Work maps will be prepared as needed in each phase of the work. Compartment planning will be done at the ranger level. Inspections to cover adequacy of compartment planning will be regularly scheduled by the forest supervisor.

e. Allowable Cut

The allowable cut for the working circle was set at the most appropriate level after considering volumes of cut indicated by several different regulatory formulas and methods.

Four formulas were used to indicate the cut: Kemp, Austrian, Hanzlik, and VonMantel. The last three are volume regulation formulas. The Kemp formula is generally regarded as an area regulation method although its end values seek to regulate both area and volume. In its application, both inventory areas and volumes are used. The formula has generally given satisfactory results in this region when compared (on the same area) with other methods of recognized accuracy, as the Tabular Check Method.

The indicated allowable annual cuts of these three formulas and their application to data in the working circle are shown in appendix table 8. The Hanzlik formula results are high because the increment figure used in the allowable cut calculations in appendix table 8 is for all growing stands rather than for stands under rotation age as required by the formula. In the case of the Austrian formula, results hinge heavily upon which growth figure is used. If the estimated current growth is used (periodic annual--with spruce mortality equal to woody growth in the type), the indicated allowable annual cut would be 171 MM board feet.

The Kemp formula was the only one in which the cut was worked out separately for each type. An expression of cut by types is helpful for certain management purposes, but it need not be worked out for each check method. Consequently, for all methods, other than the Kemp, types were combined. This practice necessitates proper weighing of all factors, particularly rotation ages.

As a precaution against inadequacies, or inapplicability of the formulae, the results were also checked by the so called "Tabular Check Method." This method requires use of a reliable growth rate and a breakdown of growing stock by age classes as in table 4. The method tested the indicated rates of cutting (in volume) to see (1) how well rotations selected will stand up, (2) whether or not too much or too little time will be spent cutting overaged material, and (3) if certain age classes might be scheduled for cutting before they are old enough to produce a sufficient quantity of salable products. In some instances, early initiation of cultural practices will permit a reduction of the rotation age considered appropriate for unmanaged stands, or stands receiving only a minimum of intensive silvicultural practices. The Tabular Check Method, as applied to all sawtimber producing acreage (appendix table 8b), showed that a cutting rate of 164 MM board feet from harvest cuttings is most satisfactory from the standpoint of the various management problems involved.

Indicated allowable cuts from harvest cuttings are shown in table 12 for all methods used. These cuts are separately stated for: (1) the sawtimber portion of the stand (above 11" d.b.h.) in board feet, and (2) for the pole portion (between 5" and 11" d.b.h.) in cubic feet and cords. No volumes were computed for trees under 5" d.b.h.

TABLE 12 - ALLOWABLE ANNUAL CUTS OF SAWTIMBER AND OTHER PRODUCTS
INDICATED BY VARIOUS REGULATORY METHODS

NATIONAL FOREST

Regulatory Method	All Types and All Species			Sawtimber Area Cut Annually Acres
	Sawtimber	Other Products		
	MM bd.ft. (Scribner)	MM cu.ft.	M Cords	
<u>Harvest Cuttings</u>				
Kemp	164.0	19.8	215	20,522
Von Mantel	163.5	23.9	266	-
Austrian	171.3	(Not Est.)	(Not Est.)	-
Hanzlik	170.7	(Not Est.)	(Not Est.)	-
Tabular Check	160-165 most satisfactory	(Not Est.)	(Not Est.)	12,020
Area Regulation	101.1	(Not Est.)	(Not Est.)	10,390
<u>Intermediate Cutting</u>	21.5	6.4	71	15,485

The Kemp formula showed an allowable annual cut of 164 MM board feet of sawtimber and 215 M cords of other materials from harvest cutting areas. This is believed to be a satisfactory rate of cutting for the next ten-year period in the face of all the evidence.

The above cut would come from about 20,500 acres annually. This compares with 10,400 acres of cutting area under strict area control. The time is not yet ripe to practice strict area control. There is too much of a backlog of overaged material on hand, much of which occurs as light volumes per acre. Moreover, industry is presently unable to practice as complete utilization of all products in all instances as is desirable under strict area control.

A point to bear in mind is that none of the formulae consider volumes that might be harvested as thinnings and intermediate and improvement cuttings. Few such cuttings have been made to date, but with the rapidly increasing number of stud mills in the area which can and do take small-size material, demand can be expected to rise. An allowable cut for this class of product has been set up. However, for the present it might be better to consider this as an objective rather than a maximum amount that may be cut.

Table 8D in the appendix shows the volume that can be removed from dense young stands as intermediate cuttings each year without reducing the final harvest cut to any appreciable extent. It appears possible to remove as a sustained quantity of such cuttings a total of 21 MM board feet of sawtimber and 71 M cords of other products annually. These cuts will be over and above that which is taken out as harvest cuttings. Intermediate cuttings must be light as indicated in the marking guides for each type. Major consideration will be centered upon improving growing conditions for the residual stand. Table 13 shows both the calculated allowable cuts of sawtimber from harvest cuttings and the sustained cut from intermediate cuttings according to species representation. It also shows the allowable cut of other products for all species combined. The recommended cuts over the next 10 years are related to the need for cutting certain species over others.

The cuts indicated are of mature, live sawtimber. They do not include salvage volumes from dead and cull trees and tops. For the present such volumes are considered unregulated and may be removed in accordance with demand.

TABLE 13 - ALLOWABLE AND SUSTAINED ANNUAL CUTS BY SPECIES
FOR THE NEXT TEN YEARS

NATIONAL FOREST

Annual Cut	Sawtimber Volumes by Species							Other Products M Cords
	WP	PP	LPP	L-DF	S & C	H-GF & AF	Total	
	- - - - -MM Board Feet (Scribner)- - - - -							
<u>Harvest Cuttings</u> Allowable	7.7	12.0	20.9	80.3	29.4	13.7	164.0	215
<u>Intermediate Cuts</u> Sustained	1.0	1.6	2.7	11.0	3.6	1.6	21.5	71

It is not necessary to limit the cut of each and every species individually--only those which may become depleted rapidly and thereby adversely affect local and national economies. For the present it will suffice to regulate the cutting of Engelmann spruce, white and ponderosa pines, and of all species combined; i.e., hold them within the allowable limits defined. Regulation within the pine and spruce types can be obtained by manipulation of size and timing of offerings.

Cut by species for different portions of the rotation will not be strictly in accordance with species representation, due to unequal susceptibility of maturing timber to destructive agencies. The more susceptible species will be harvested first, insofar as possible. All mature white pine, whether in blister rust control units or not and which is heavily infected with blister rust, must be harvested during the first half of the rotation or be lost. Lodgepole pine, likewise, is subject to early insect attacks and must be harvested promptly when ripe.

The regulated volume of other products, indicated in table 13 as 215,000 cords, pertains to material which may be taken from pole-size trees produced in conjunction with growing sawtimber crops and from similar pole material on a large acreage of lodgepole pine type that will not produce saw logs. It does not include "salvage" materials that might come from usable portions of tops, cull, and dead trees. The allowable cut of salvage products has not been determined, nor is regulation of these volumes planned. The perishable nature of this material makes it desirable to harvest it in unlimited quantities as soon as possible. As a tentative goal, an effort will be made to obtain utilization of 20,000 cords per year. In the past, most of the material that has been marketed has been sound-dead of sawtimber size. For information on quantities available, see table 8.

To the extent that salvage material and scattered overstory trees not included in the inventory are utilized, the actual cut may be expected to overrun the allowable cut. Tending to offset this possible gain is the liability of loss of primary, green-growing stock to fires and other agencies.

Subject to the above requirements, regulation of the sawtimber cut will apply primarily to (1) white and ponderosa pine combined, (2) spruce, and (3) all species. If these are kept within prescribed limits, there should be no serious repercussions on local economy.

Since operating and marketing conditions may not permit cutting precisely at the rates specified in table 13, the rate for each sawtimber category listed above and for other products may be exceeded by not more than 25 percent in one year, providing the total cut in a ten-year period is not exceeded by more than 5 percent. Undercuts may be accumulated by decades, or until the plan is revised; but liquidation of any accumulation will be subject to the 25 percent overcut limitation.

Cutting control will apply primarily to the working circle; but, since administrative control is by ranger districts, table 14 shows an apportionment of the cut on the basis of the approximate merchantable volume in each. This apportionment must be regarded as temporary and subject to revision at any time to meet cutting needs throughout the working circle. At the same time, it is well to remember that the volume estimate by districts on which the apportionment of cut rests is subject to greater error, species by species and for total volume, than for the working circle as a whole.

TABLE 14 - RECOMMENDED ANNUAL CUT QUOTA BY RANGER DISTRICTS

NATIONAL FOREST

Ranger District	WP	PP	LPP	L-DF	S-AF	Other	Total	Other Products	Annual Cutting Area
	-	-	-	-	-	-	-	-	-
	-	-	-	MM	Board Feet	-	-	M Cords	Acres
Rexford	.6	1.5	3.2	9.8	6.5	.4	22.0	28.2	2,384.0
Sylvanite	1.0	.6	2.0	7.3	5.7	.8	17.4	20.4	1,730.1
Fortine	.6	1.1	3.3	11.6	5.9	.5	23.0	30.8	2,619.2
Troy	1.9	1.0	2.1	11.3	5.3	2.2	23.8	28.0	2,365.7
Libby	1.4	2.4	2.8	12.2	3.9	.9	23.6	34.2	2,888.7
Fisher River	.7	2.8	2.3	10.3	2.0	.4	18.5	27.5	2,334.7
Warland	.5	2.0	1.6	7.2	1.5	.3	13.1	19.8	1,666.5
Yaak	1.0	.6	3.6	10.6	6.3	.5	22.6	26.2	2,229.6
Total	7.7	12.0	20.9	80.3	37.1	6.0	164.0	215.1	18,218.5

Should any substantial amounts of sound sawtimber be harvested as pulpwood, such quantities must be charged against the sawtimber allowable cut rather than against other products. A considerable part of the hemlock, grand fir, alpine fir, and lodgepole pine volume is apt to be utilized this way.

The sustained cut of sawtimber and other products from ownerships other than national forest has not been determined precisely. A rough estimate is shown in appendix table 8C. Sustained cut of sawtimber from other lands is about 43.5 MM board feet. An additional volume in other products is also available.

Great strides can be made toward increasing both the regulated and unregulated cuts by providing greater accessibility and more intensive forestry practices. As much as 25 percent more sawtimber volume can be obtained during a single rotation by capturing mortality alone. Other gains can be realized through stimulation of growth of crop trees, keeping destructive agencies in check, and bettering the stocking over the whole area. At the present time stocking is inadequate (poor or below) on about 19 percent of the nonreserved commercial forest area and overdense on much of the remainder. Under well stocked conditions and good age class distribution, the allowable annual cut on national-forest lands could approach the growth of a normal forest or 277 MM board feet.

Through cutting at levels recommended in the plan, and barring the eventuality of a catastrophe of some sort, there should be a considerable improvement in stocking and age class distribution by the end of the first rotation. Though age class distribution will not be perfect by that time, nor will stocking be normal or even desirable in all cases, final objectives can easily be reached in the second rotation.

f. Cutting Budget

The cutting budget for the next five years is included in appendix table 23, Coordinated Annual Harvest and Access Road Plan.^{1/} This plan lists proposed sales locations, volumes to be offered, and necessary access roads needed to carry out the plan. The plan will be revised annually to keep it current. Programing will stay within allowable cut limits to meet the demand for specific products, insofar as possible, and abide by the silvicultural objectives of the plan.

Allowable annual cut quotas for the 8 blocks have been established in appendix tables 11, 12, 13, 14, 15, 16, 17, and 18. These quotas are to be used as a guide in formulation of short-term and long-range cutting programs for ranger districts. However, in the event of emergencies such as unusual insect, disease, windthrow or fire damage, or for other valid reasons such as loss of market or the need to attract new industry for the processing of products other than sawtimber, the quota may be altered by the forest supervisor.

^{1/} Table 25 in this reproduction.

7. SALES POLICY

Follow the general sales policies established in the Forest Service Handbook Chapter 2430 and regional policy supplements to:

a. General

- (1) Prepare and administer sales to provide coordination with other uses.
- (2) Develop the working circle as a whole in accordance with the transportation plan to the fullest extent possible under the limitations of the "prudent operator" concept.
- (3) Provide for acceptable regeneration of desirable species and proceed toward more balanced distribution of growing stock.
- (4) Increase utilization of smaller logs, low value species, and defective timber as economic conditions permit.
- (5) Rehabilitate sites now supporting defective residual timber to full productivity.
- (6) Control location, character and standards of cutting practices, logging roads, mill sets, and camps.
- (7) Vigorously use current authority to collect timber stand improvement funds to rehabilitate cutover areas under well prepared plans.
- (8) Require reduction of fire hazards due to logging activity.
- (9) Adapt cutting methods and practices to minimize the creation of insect and disease hazards to future crops and surrounding residual timber.

b. Size and Timing of Sales

- (1) Size - With the notable exception of the Callahan drainage, most of the commercial forest land within the working circle is served by access roads. There is little need for very large and long-term sales to provide primary access. However, many principal and main roads are presently used in timber harvest which are inadequate for efficient and safe log haul. Moreover, these roads are generally inadequate for "all purpose" use.

Sizeable offerings may be required to encourage establishment of industry designed to utilize lodgepole pine, and to provide a portion of the needed improvement to the existing system.

Sales designed to rehabilitate old logging areas or to improve growing conditions for the most desirable species in wild stands by intermediate cutting, will be utilized to the greatest practicable extent. Areas cut over under the spruce bark beetle program will receive special attention in order to preserve spruce as a high component of reestablished stands.

Intermediate cuts will also be utilized to salvage volumes contained in short-lived species such as lodgepole pine and subalpine fir, where these species occur in admixture with desirable long-lived species such as yellow pine, white pine, spruce and larch. Where hemlock, lodgepole pine, and grand fir occur as a second story in the white pine type, they will be cut before losses to rot occur, provided that such cutting can be done without unreasonably increasing the blister rust protection needs.

Sales will continue to vary in size according to (a) silvicultural objectives, (b) necessity for salvage, (c) the needs of local dependent industry, and (d) specialized cases where coordination with other uses are limiting.

Sales of all size classes will be made, with special consideration being given to the needs for road development of the block and the capacity of local dependent mills.

(2) Timing - The objectives shall be to prepare sales sufficiently in advance so that local wood-using industry may plan its operations at least one year in advance.

c. Merchantability Specifications

Regional merchantability specification guidelines, as stated in FSH 2432.23 will be followed where local economic utilization to these guidelines is possible. More rigid specifications will be followed where desirable and not economically damaging to the purchaser. The guiding policy is to secure maximum utilization of forest products under prevailing economic conditions of demand, manufacturing costs, and methods. Costs and allowances used in timber appraisals are those applicable to the average efficient operator in the area and for the class of operation for which the sale is suitable. Removal of products which will not return a reasonable profit will only be required when compelling silvicultural reasons are overriding.

d. Logging Methods

Adequate cost allowances will be made in timber appraisals to provide for conduct of logging by acceptable methods and with necessary care. Prompt administrative action will insure performance to the standards contemplated in the appraisal.

Contracts will specify logging practices for the protection of soil, watershed, residual tree and reproduction values. Horse, jammer or overhead cable skidding will be required where erosion hazards and needs of the residual stand justify. Prohibition of tree length skidding, or requirements of skidding on specified snow depths will be established where necessary to protect reproduction.

Contract provisions will be made to obtain necessary permanent drainage on all timber sale roads to prevent soil erosion. Temporary erosion measures and structures will be required where necessary on skid and jammer roads, landings, etc.¹

Current approved policies regarding logging in streamside and roadside zones and other special treatment areas will be followed. Unless subsequently altered by policy changes, the following practices will be observed:

(1) Locate roads-prisms (including clearing) outside of streamside strips, wherever possible. Streamside strips will be established along all permanent and intermittent streams where disturbance is apt to create damaging erosion hazards during peak flows. Generally a minimum of a one-chain strip on both sides of the stream will be observed.

(2) Preserve streamside strips along major streams where logging will be confined to dead, decadent, diseased, insect infested or blowdown timber. Methods of logging will be confined to jammer, double drum or horse logging. Felling and skidding shall be away from the stream wherever possible; if crossings are necessary, temporary skidding bridges will be utilized and removed at the end of each operating season. Regeneration will be principally to tolerant species.

(3) Stream channels will be kept free of logging debris.

(4) Logging in recreational areas will follow the established policy of FSH 2413.

e. Slash Disposal

Presale planning will consider the requirements of silviculture, erosion control, insect control, recreation and other factors in determination of method and intensity of slash disposal.

The objective will be to treat the slash and logging debris in a manner appropriate to reducing the hazard to a level whereby available facilities will provide the same degree of protection to the cutover area as was available to it prior to cutting. Regional policy has established this as a reduction to a M-M fuel classification. Policy established in Region One Slash Treatment Handbook will govern.

¹/A Guide to Erosion Protection on National Forest Timber Sale Areas.
U.S.F.S. Reg. 5, 1954.

Dozer bunch and burn methods will be utilized where regeneration to intolerant species is the objective; broadcast burning will be utilized for the same purpose where topography and soil conditions limit dozer use or where economic considerations are most important. Either method will be used with caution to minimize detrimental effects on the watershed.

Lopping will be practiced in partial cuts where acceptable results may be obtained.

Protection in lieu of disposal will be utilized on areas of less than M-M fuel concentrations, where damage to residual stands may result from burning, or on heavy concentrations, until it is possible to satisfactorily reduce the hazard by other means.

Slash disposal plans will be an integral part of the timber sale report and will be approved by the officer or his designate who approves the contract.

f. Christmas Trees

The Kootenai Working Circle has by far the largest harvest of Christmas trees in Region One. It is for this reason that the town of Eureka, Montana, claims the title "Christmas Tree Capital of the World." The Christmas tree business is responsible for much of the economic stability of the local communities. A large segment of the local population derives a major part or all of its annual income from this special product.

Despite local dependence upon the Christmas tree harvest for profit, basic forest management of individual sale areas will not be for permanent Christmas tree production. Policy for the program is based on the premise that Christmas trees will be harvested only so long as silvicultural benefits through the removal of competitive species, improved spacing of residual stocking, and increased growth result from making such sales. Christmas tree harvest sales will be made as a stand improvement measure with management geared to the production of saw logs at rotation age.

Douglas-fir Christmas trees are sold from three general timber types in this working circle. Major acreage is in the ponderosa pine type where Douglas-fir of low quality and poor growth characteristics competes successfully enough in many cases to virtually eliminate ponderosa pine young growth. Christmas tree harvest plans for these areas call for the elimination of all the Douglas-fir stocking possible to favor ponderosa pine. In the larch--Douglas-fir and straight Douglas-fir types, more careful management of cutting is required. The objective is to use Christmas tree sales to (1) silviculturally treat the area to favor larch on good larch sites, (2) to release crop trees of both species, and (3) to improve spacing in the stand.

8. FOREST DEVELOPMENT

a. Transportation

(1) Present System

Railroads - The Great Northern, a transcontinental railroad, traverses the working circle from east to west, entering on the east side at Stryker and leaving on the west side at Leonia, Idaho. No point in the forest is more than 40 miles from the railroad; 75 percent of the area is within 20 miles. However, this favorable situation will be drastically changed if the Libby Dam is built.

Federal and State Highways

(a) U.S. No. 2 (Forest Highway 1 and 2), an east-west highway, follows a route from Kalispell, by way of the Thompson Lakes and Libby Creek to Libby. From Libby through Troy and on to the western boundary of the forest, this highway more or less parallels the Kootenai River. Subgrade reinforcement and a good surface is needed on this road to withstand year-round heavy logging traffic.

(b) U.S. No. 93 (Forest Highway 12), a north-south highway, follows a route north from Whitefish paralleling the Great Northern Railroad to Eureka. Continuing north from Eureka 8 miles, the highway enters Canada at Roosville. Much of this road is inadequate for either normal or heavy logging traffic.

(c) State Highway No. 37 (Forest Highway 57) parallels the Kootenai River from Libby to Rexford. At Rexford it continues on east and joins U.S. Highway No. 93 one mile north of Eureka. The majority of this road is inadequate for log haul and extremely dangerous for log haul and public travel combined.

(d) State FA202 (Forest Highway 5), a north-south highway, connects U.S. Highway No. 2 with U.S. No. 10A. It parallels Lake Creek to Bull Lake and continues past Bull Lake south to the forest boundary. One-quarter of this road is adequate for all traffic and the remainder will be constructed to a higher standard in the immediate future.

These roads are kept open to year round traffic and all are paved with the exception of Forest Highway 5. Approximately 25 percent of it is paved at the present.

County and National Forest Roads - The Federal and State highway system is supplemented by a network of county and national-forest roads. Presently there is a total of 2,290 miles of this type constructed. Of this total, 1,040 miles are primitive; 1,050 miles graded and drained; and 200 miles have an adequate surface of which 60 miles are paved. All major drainages, with the exception of Callahan Creek, were tapped by access roads during the spruce beetle access program.

(2) Utilization Roads

(a) Needs - Table 15 shows a partial list of forest development road construction and reconstruction needs for full development of the working circle. These roads generally will require either Federal financing, or supplemental Federal aid. No attempt is made to show individual road projects expected to be constructed under normal timber sale contracts.

The roads tabulated are generally those of critical importance to the full use and development of the working circle. All will serve the timber harvest program because there is little noncommercial area on the forest. Deficiencies shown by tabulation under "inadequate" generally are occasioned by widths too narrow for multiple-use traffic, by lack of suitable drainage and surfacing, or in a few cases, by excessive grade. Nonexisting mileage cost estimates are predicated upon provision of "all-purpose" standards.

Present cost estimates are based upon provision of "all-purpose" standards. No breakdown has been made of costs of log haul standard alone. It is estimated that 60 percent of costs shown on inadequate sections are for provision of all-purpose standards. Of the remaining 40 percent, about one-third can be provided by timber appraisal allowances. On nonexisting sections of roads, the break is estimated to be 75 percent for provision of log haul standard and 25 percent for all-purpose. Of the timber portion on the tabulated roads, about one-half can be provided by appraisal allowance.

All costs shown are based upon engineering contract cost estimates.

**TABLE 15 - INVENTORY OF CRITICAL ROAD CONSTRUCTION OR RECONSTRUCTION
NEEDS FOR FULL DEVELOPMENT**

		Construction Status				Estimated
Road No.	Name	Ade- quate	Inade- quate	Non- existing	Total	Cost to Complete
		Miles				
<u>Montana</u>						
48	Five Mile-Lake Creek	-	18.0	-	18.0	\$ 299,000
68	Pipe Creek	-	36.6	-	36.6	250,000
92	Yaak Valley-W. Side	-	49.7	-	49.7	2,105,000
114	Graves Creek	-	18.8	-	18.8	492,000
176	Yaak R. East Side	-	3.5	3.5	7.0	113,000
228.1	East Fisher	-	11.5	-	11.5	138,000
231	Libby Cr.-W. Fisher	-	25.5	-	25.5	193,000
278	Bear Creek	-	13.5	-	13.5	251,000
336	Big Cr.-Pipe Creek	-	25.0	-	25.0	730,000
414	S. Fk. Callahan Cr.	-	-	3.0	3.0	135,000
427	Callahan-Boulder Cr.	-	9.5	0.5	10.0	424,000
565	Tweed-Rexford	4.8	17.4	14.2	36.4	793,000
593	Long Meadow	-	-	11.0	11.0	440,000
619	Sutton Creek	-	1.7	14.3	16.0	223,000
750	Porcupine Creek	-	1.0	8.0	9.0	210,000
856	Pinkham-Five Mile	10.0	18.0	6.5	34.5	555,000
4678	Lost Fork-17 Mile	2.0	3.8	11.0	16.8	285,000
Subtotals - Montana		16.8	253.5	72.0	342.3	\$7,636,000
<u>Idaho</u>						
414	S. Fk. Callahan Cr.	-	-	9.4	9.4	\$ 290,000
427	Callahan-Boulder	-	-	9.5	9.5	297,000
Subtotals - Idaho		-	-	18.9	18.9	\$ 587,000
GRAND TOTAL WORKING CIRCLE		16.8	253.5	90.9	361.2	\$8,223,000

In addition to the previous tabulation, the present transportation plan calls for construction or betterment of the following classes of roads:

Class of Road	Total	Adequate	Inadequate	Nonexisting	Estimated Cost to Complete
	----- Miles -----				
IU Roads	10,800.0	12.2	217.1	10,570.7	\$78,333,000
IA Roads	5,401.5	1,061.9	110.1	4,229.5	80,656,000
Forest Highways	222.7	16.2	206.5	-	16,036,000

(b) Policy - The forest transportation plan specifies standards, location, and length of each individual project. This plan with its periodic revisions will be used as a guide in developing access roads in all logging units. "Region One Criteria for Forest Development Roads" will be used as a guide for planning, location, and design of access roads.

(c) Program - The present sales program calls for an additional 180 miles of roads of all classes to be constructed and 20 miles to be reconstructed each year for the next 5 years. These roads are shown in the Coordinated 5-Year Timber Harvest Access Road Plan in the appendix, table 23. ^{1/} Thirty percent or 65 miles of the total will be roads having steady traffic or importance from a protection and use standpoint, and will be maintained either by the Forest Service or by a cooperator.

The remainder will not be maintained for travel after logging operations are completed until again needed for timber removal. However, timber sale contracts will require minimum practical widths, outsloping of roadbed, removal of erosion-hazardous temporary drainage structures and other practical measures to assure minimum soil movement during period of nonuse.

(d) Rights-of-Way - The securing of rights-of-way provides a problem within the working circle. Where rights-of-way are needed, plans are now made to secure them well in advance of the sale. No timber will be moved over a road unless rights-of-way have been secured, or public access is legally assured. Negotiations are now in progress to obtain needed rights-of-way from the principal private landowners in the Fisher River District. These negotiations may aid in obtaining rights-of-way elsewhere on the working circle.

^{1/}Table 25 in reproduction.

(e) General - If Libby Dam and Long Meadows Dam should be built, they will pose problems of major reconstruction of road systems adjacent to the flowage area. These dams will force the road networks into higher elevations where construction and maintenance costs will be substantially higher.

b. Planting

(1) Needs - 19,200 acres of commercial forest lands within the working circle are less than 10 percent stocked. Seedlings and saplings, plus pole stands that are poorly stocked (10 percent to 39 percent), occupy an additional 65,200 acres. Blocks of the poorly stocked pole areas, as well as some of the younger classes, will develop into adequately stocked saw log stands, but full stocking on much of the area will be dependent upon planting projects. The above categories represent 5 percent of the working circle's commercial forest land.

The following factors contribute to low productivity and stocking deficits on the above acreage: (1) heavy surface root competition from grass species; (2) advanced brush field development; (3) excessive damage to reproduction principally by big game animals; (4) infrequent seed years; (5) and high soil temperatures during the summer.

Productivity studies on spruce clear-cut areas show that 9,750 acres are nonstocked with an additional 4,000 acres where restocking by natural methods is now doubtful. The majority of the blocks cut in and subsequent to 1954 have inadequate regeneration. Planting or rescarification will be needed on much of this area.

During the initial phases of the spruce bark beetle program, it was necessary to offer spruce at bargain basement prices in order to encourage the manufacturing industry and consumers to utilize spruce before natural deteriorating agents made the timber unusable. Thus K-V collections, being tied to 50 percent of stumpage, were correspondingly low and were inadequate to accomplish a complete job of rehabilitation. The areas described above resulted to a large degree from this situation. A broad estimate indicates that about one-half of the needed funds were collected. Cleanup and salvage sales are now making up a portion of this deficiency. However, a need for appropriated money to complete rehabilitation in these areas is evident.

Failure of spruce to produce seed since 1954 has cut nursery production of spruce to token quantities. When a good cone year again makes spruce seed plentiful, a period of 4 to 5 years will be needed before nursery stock can be planted in the field in quantity.

Scarified seedbed areas in the ponderosa pine type also have been set back by seed production failures in that species. Benefits derived from the very heavy seed fall in 1958 will be appraised and planting planned for areas where surveys show no start of a satisfactory new crop.

The merit of direct seeding as a reforestation method must be established by studies now programed in the region. Direct seeding treatment could accelerate the return of low productivity areas into full production at lower costs and increase the areas worked, thus reducing the period required for total working circle rehabilitation.

Each year timber sale operations are increasing the acreage to be planted. Where timber harvest methods create areas needing planting, costs can usually be paid from earnings collected under the Knudson-Vandenberg Act. Where planting is required on BRC units, the needed BRC work can rarely be financed from K-V, and funds for completion may require supplemental BRC money.

Understocked and nonstocked acreage figures quoted were derived from the "Forest Inventory" for the Kootenai Working Circle. Acreage totals for spruce clear-cut areas were taken from the 1958 "Report on Spruce Clear-Cut Areas."

A complete planting survey of the working circle is needed to establish a definite program with objectives and priorities clearly outlined. Target date for the completion of this forest-wide survey is 1965.

(2) Policy - Planting policy for the working circle will be based on regional directives and "The Planting and Stand Improvement Handbook - Region One."

Areas not restocked since early timber harvest activities where K-V balances are no longer available will be scheduled for earliest possible planting using P&M funds.

K-V and P&M planting programs will be correlated.

Where natural stocking is not expected to develop after logging, adequate K-V funds will be collected and used for planting.

The application of the best methods for planting site preparation through the use of machines, fertilizer, rodent control or controlled burns will be required to insure plantation survival. Planting where survival is not reasonably certain will be delayed until preparatory work has been completed.

Every effort will be made to fill the nursery's requests for seed to insure a steady flow of planting stock that is adapted for planting on Kootenai areas.

Where presently nonstocked areas have primary uses other than timber production and watershed protection, planting will be assigned a low priority. Areas where grazing and winter game use conflict with plantation establishment, planting will be assigned low priority until remedial measures, such as fencing, can be taken.

(3) Program - Planting objectives will be to restock with species suitable to the site, the maximum acreage possible with funds now available. In the next 5-year period, approximately 1,200 acres are programed for planting each year. (See appendix table no. 22.)

The ultimate objective will be to reduce the present backlog of poorly stocked acreage as rapidly as possible, meanwhile keeping planting current with restocking needs created by timber harvest. Time lost between timber harvest and restocking will be reduced to a minimum.

A program of scarification, brush eradication, prescribed burning, and fencing will be required to reduce acreages of poorly stocked stands. Substantial amounts of appropriated money will be needed to attain the above objectives.

A record of plantable areas will be set up and maintained annually. Individual file folders for each planting project will show species, site, and recommended planting practices. Seasonal planting plans and the five-year planting program will be taken each year from this file of approved projects.

Appendix table 22 tabulates the summary of the five-year planting program for the working circle. A graphic presentation is not shown because the large number of small areas distributed over all blocks cannot be adequately shown on a small scale map.

c. Timber Stand Improvement

Timber stand improvement is one key to meeting our future timber requirements. The objective of timber stand improvement work is to restore, maintain or improve productivity on forest lands. One of the major tools in accomplishing this objective shall be productivity surveys of each cutting area designed to determine existing conditions, potentials for change, and recommendations for action.

Following are tabulations, by forest type, showing the principal practices needed to accomplish the objective:

(1) Needs

(a) Ponderosa Pine

Seedbed preparation.

Fill-in plantings.

Cleaning and thinning to improve spacing. Improvement cutting to favor ponderosa pine.

Provide mineral seedbed and reduce rodent population for protection of seed crops.

Release and pruning of crop trees.

Liberation cuttings to remove wolf overstories.

Protection from rodents (porcupines).

(b) White Pine

Blister rust control.

Planting.

Cleaning and weeding.

Liberation cuts to remove wolf tree overstories.

Crop tree release and pruning.

Improvement cuts to increase white pine stocking percentage.

Thinning.

(c) Larch--Douglas-fir

Seedbed preparation.

Sanitation cuts to remove dwarfmistletoe and other unhealthy trees.

Thinning, cleaning, and improvement cutting.

Crop tree release.

Planting when needed (Douglas-fir only).

(d) Spruce

Seedbed scarification or planting where needed.

Thinning of overstocked seedbed areas.

Improvement cuttings.

Rescarification of areas nonstocked due to seed failures.

(e) Lodgepole Pine

Sanitation cutting of dwarfmistletoe and otherwise unhealthy trees.

Thinning and cleaning to improve spacing.

Release cutting.

Seedbed preparation.

Planting where other means fail.

(f) Cedar

Removal of cull trees.

Planting where needed. (To white pine in BRC Units; to spruce, cedar, or Douglas-fir outside.)

(g) Hemlock-Subalpine fir

Removal of cull trees.

Favor other species when present.

(2) Policy

References - Aims of the T.S.I. program for the working circle are defined in the F.S. Manual, Timber Management Section--Title 2470, and the "Planting and Stand Improvement Handbook - Region One." In addition, recommendations in the various timber marking guides and regional directives will be followed.

The improvement of stocking on all young stands to increase growth rates, quality, yields, and proportion of desirable species shall be a major objective of T.S.I. work.

Timber stand improvement plans are included in all timber sale reports covering work programs for all K-V funds to be collected, as well as work needed in excess of the K-V earning capacity of the sale. Our objective is improved planning for programed T.S.I. projects.

Christmas tree sales in ponderosa pine type will be continued to benefit the areas by the removal of competitive Douglas-fir and to collect K-V funds for additional T.S.I. work favoring pine.

Seedbed preparatory work will be programed where possible to induce natural regeneration. The waiting period for restocking to occur will be limited to five years after completion of the preparatory work.

On white pine sites within BRC units, prescribed burning after clear cutting will be followed by the planting of white pine.

Whenever timber stand improvement work can be accomplished by salvage sales or other administrative action, it will be so planned.

(3) Program - Programing of T.S.I. work will be on a basis of total needed work. Accomplishment of planned work will be limited by availability of funds. The major part of present T.S.I. work will be on sale areas where the collection of K-V funds make stand improvement work possible. Work on young stands outside sale areas will be planned but delayed pending allocation of regular funds. A full usage of funds currently available will be made while correlating work financed with K-V and appropriated funds.

Both planting and T.S.I. plans will be kept currently for all work needed for the Kootenai Working Circle.

Timber stand improvement projects on this working circle are planned as part of the timber sale report and appraisal. Thus the needs of T.S.I. are recognized and action programs are developed concurrently with selection of methods of cutting and slash disposal. Amendments are made, as needed, following reevaluation of the cutover area but no later than three years after cutting.

Table 16 shows T.S.I. work accomplished during the years 1954 through 1958.

TABLE 16 - TIMBER STAND IMPROVEMENT ACCOMPLISHMENTS
C.Y. 1954 THROUGH 1958

Accomplishment	Year					Total	Average Annual
	1954	1955	1956	1957	1958		
	Acres						
Reforestation (Primarily scarification)	1,570	2,770	3,829	3,637	5,466	17,272	3,454
Weeding, Thinning, Cleaning, Liberation Cutting	324	2,041	1,119	1,458	711	5,653	1,131
Pruning and Crop Tree Release	-	152	35	-	283	470	94
Disease Control (Primarily dwarfmistletoe)	-	19	-	598	-	617	123
Planting Site							
Slashing	-	85	-	-	-	85	17
Burning	-	40	-	-	-	40	8
Furrowing	-	-	18	-	-	18	4

**TABLE 17 - ANALYSIS OF ESTIMATED TIMBER STAND IMPROVEMENT PROJECTS
TO BE ACCOMPLISHED BY YEAR 1975 AND BY YEAR 2000
P & M FUNDS ONLY**

Treatment	REGENERATION				SANITATION CUTS		IMPROVEMENT CUTTINGS		Overstocked Stands, Thinning, Weeding, Sanitation Cutting-Years	
	Nonstocked Area By Years 1975 2000	Rehabilitation New Burns By Years 1960- 1975 2000	Understocked Stands (Fill-in Planting)(App. Table 1-Strata 8P & 7P) Years 1975 2000	Eradication of Unmerchantable, Disease Stands and Plant By Years 1975 2000	Plantation Release, Thinning, Weeding-Years 1975 2000	Thinning, Weeding, Sanitation Cutting-Years 1975 2000				
<u>PLANTING OR SEEDING</u>										
Acres	195631/	50002/	1204/	20	2007/	3008/	50	3008/	500	
Est. Cost	782500	200000	4200	700		4500	1000	4500	7500	
<u>WP</u>										
Acres		5003/	2900	1700	600	100	200	100	-	
Est. Cost		20000	101500	59500	12000	1500	4000	1500	-	
<u>L-DF</u>										
Acres			8800	5500	200	15000	50	15000	5000	
Est. Cost			308000	192500	4000	225000	1000	225000	75000	
<u>S-AF</u>										
Acres			4800	2500	-	800	300	800	-	
Est. Cost			168000	87500	-	120000	6000	120000	-	
<u>C-H-GF</u>										
Acres				50005/	5000					
Est. Cost				200000	200000					
<u>LPP</u>										
Acres			6000	7000		15000		15000	15000	
Est. Cost			210000	245000		225000		225000	225000	

(Continued on next page)

TABLE 17 - ANALYSIS OF ESTIMATED TIMBER STAND IMPROVEMENT PROJECTS
continued TO BE ACCOMPLISHED BY YEAR 1975 AND BY YEAR 2000
P & M FUNDS ONLY

Treatment	REGENERATION			SANTATION CUTS		IMPROVEMENT CUTTINGS	Overstocked Stands, Thinning, Weeding, Sanitation Cutting-Years
	Nonstocked Area By Years 1975 2000	Rehabilitation New Burns By Years 1960- 1975 2000	Understocked Stands (Fill-in Planting)(App. Table 1-Strata 8P & 7P) Years 1975 2000	Eradication of Unmerchantable, Disease Stands and Plant By Years 1975 2000		Plantation Release, Thinning, Weeding-Years 1975 2000	1975 2000
<u>DWARFMISTLETOE INFECTED</u>							
L Acres				15000 ⁶ /	10000		
Est. Cost				900000	600000		
LPP Acres				2000 ⁶ /	8000		
Est. Cost				120000	480000		
<u>ELECTRODERMA INFECTED</u>							
PP Acres				500	-		
Est. Cost				300000	-		
<u>ERADICATION BRUSH FIELDS</u>	2500 ⁹ /						
Acres	62500						
Est. Cost							

(Continued on next page)

TABLE 17 - ANALYSIS OF ESTIMATED TIMBER STAND IMPROVEMENT PROJECTS
continued
 TO BE ACCOMPLISHED BY YEAR 1975 AND BY YEAR 2000
 P & M FUNDS ONLY

- 1/ Nonstocked area to be planted by 1975 taken from appendix table one.
- 2/ Estimate of area upon which reproduction will fail due to drought, repeated needle cast, infections or for a variety of other reasons. Usually these losses cannot be predicted accurately enough to appraise as a K-V cost in the original sale.
- 3/ Forecast of burned-over area upon which no K-V collection is possible due to absence of salvageable volumes or areas too remote or otherwise uneconomic for salvage logging.
- 4/ A proportionate amount of acreage shown in appendix table one in 8P and 7P strata was taken based upon general, local knowledge. Specific information is not available. Emphasis is placed upon white pine and ponderosa pine because of the general shortage of younger age classes in these two types. Emphasis has also been placed on spruce in an attempt to increase usable growth in young stands to replace volume lost to spruce bark beetle.
- 5/ Large areas of climax hemlock containing probably 50-60 M per acre gross volume of cull hemlock and a scattering of other species, also defective, are found on the west side of the forest. Reproduction, where present, is almost 100 percent hemlock. Since these are among the best sites found on the forest, it is important that they be returned to productive status.
- 6/ Numerous stands are found containing a dead or dying dwarf mistletoe overstory not merchantable because of small size, low volume per acre, or defect. The understory is less than 5-inches d.b.h. and heavily infected with mistletoe. No merchantable product can be removed from these stands during their probable life.
- 7/ The acreage represented here is roughly one-eighth of the total plantation area. No specific information is available other than survival which has not been correlated with site capabilities. The estimates for areas needing release are considered conservative.
- 8/ Acreages shown are reduced from those shown on appendix table one under the 8W strata. Reductions have been made on the basis of general field knowledge. No specific information is available. A type of machine thinning, as yet undetermined, will be utilized in connection with hand weeding and sanitation cutting.
- 9/ Estimated area now covered with brushfield which is capable of producing commercial timber.

d. Insect Control

(1) Problem

(a) Past - The history of insect aggression in the Kootenai Working Circle has been a continuing forest-wide pattern of scattered sporadic attacks on individual or small groups of trees. Each year insect action has caused persisting attrition in overmature stands.

In addition to normal losses, overaged timber creates an ever present potential for a major insect outbreak. This occurred in the spruce-subalpine fir type following the heavy blowdown in November, 1949. A large supply of host material allowed the spruce bark beetle to overcome all natural controls and resulted in the epidemic of 1952-1957.

(b) Present - The salvage phase of the spruce bark beetle epidemic is drawing to a close. Several factors have contributed in bringing this about, namely, restoration of nature's balances, lack of host material, and utilization of the insect-killed timber as sawtimber. The rapid harvest of spruce volumes in control operations has resulted in an accelerated cutting budget above the sustained yield capacity.

Insect pests presently active on the forest in the order of current destructive importance are:

- | | |
|---|--|
| 1. Spruce bark beetle | Still active in remaining pure spruce stands; limited activity in mixed stands. |
| 2. Douglas-fir beetle | Large volumes are annually being lost as individual trees or in scattered groups. |
| 3. Western pine beetle | Steady although presently nominal loss of scattered mature ponderosa pine trees individually or in groups. |
| 4. Mountain pine beetle | Mature white pine and lodgepole are annually being attacked in small groups or individually. |
| 5. Larch sawflies)
Larch case bearers)
Larch needle miner) | (Larch--overmature) All active and doing a small amount of damage. |

(c) Future - Until the Kootenai Working Circle's large volume of overmature timber is harvested, and a road system completed to provide rapid detection and access for control, the potential of insect activity in epidemic proportions is a constant threat. To manage the timber harvest on a sustained yield basis, loss to insects and fire must be kept at a minimum.

(2) Policy - Continue to develop the access road system to gain ready entry into high-risk areas. The control of insect outbreaks at their inception will be improved with ready access. Reconnaissance and survey work will be continuous with a sales program fluid enough to allow any necessary control measures to be taken immediately.

Overmature timber stands usually exhibit silvical conditions which are favorable to insect development. Since Kootenai stands are predominately in overage classes, we can expect insects and insect problems as well as disease to be continually present.

In order to minimize the hazard of insect development or to combat existing infestations, the following general practices will be observed:

(a) Prevention of mechanical damage to residual trees in logging operations whenever possible; where damage does occur, to require prompt removal of damaged trees.

(b) Maintain stand vigor by selective removal of susceptible trees if insect involved is not one preferring slash as host material for brood development prior to attacking green tree (i.e., spruce bark beetle, Douglas-fir beetle, mountain pine beetle, and to a lesser degree *Ips* spp.). Selective removal is especially important in recreational areas and in road and streamside strips.

(c) Where host material for slash preferring insects is present, the following practices will be observed:

Generally clear cutting will be practical to:

- (1) expose stumps and logging debris to the direct heat of the sun, thus drying out the slash;
- (2) removal of all logging damaged and weakened trees;
- (3) laying out cutting areas in a manner to minimize blowdown on the edges of clear cuts.

Prompt disposal of road right-of-way slash.

In addition, it may also be desirable to chemically treat stumps, cull logs, and tops where incipient infestations threaten areas of heavy, susceptible green timber residuals.

(3) Program - Design sales programs to allow first priority to insect control and salvage sales, thus preventing insect buildup at future dates.

e. Disease

(1) Blister Rust

(a) Need - The principal needs in the immediate future are: (1) close examination of all white pine areas on the forest to provide for future expansion of the program, particularly following logging in presently marginal white pine areas in the Yaak River drainage; (2) use of antibiotics to treat and save cankered white pine; and (3) increase the available funds within white pine units for blister rust control work on cutover areas.

(b) Policy - Policy will be to continue to give highest priority to working units containing good white pine pole stands in order to bring them through to maturity. Work in mature and overmature stands will be deferred until the stands are cut. Following cutting, control work will be initiated to protect planted white pine. Antibiotics will be used on all blister rust infected white pine stands. Research results on expanded use and development of antibiotics will be watched and applied as soon as approved.

(c) Program - It is believed that most of the reductions in areas protected by traditional BRC methods have already been made and few changes will occur in the future. Continuing efforts toward placing additional areas on a maintenance basis will allow consideration of expanding the program to stands not now included. Maintenance standards have been met on a large percentage of the present program units.

Pine disease and stocking studies of existing units and areas adjacent to present units have increased white pine acreage in the Cherry Creek and Burnt Creek units. This study will be continued and expanded. As logging occurs on deferred mature areas, efforts will be shifted toward establishing and protecting plantations of white pine to be grown on the cutover areas. Current blister rust control areas in the working circle are listed in the following tabulation:

TABLE 18 - BLISTER RUST CONTROL PROGRAM 1955 - 1959

(Protected areas by control units, compartments, and ownerships)

Unit		Unit Name	Gross Area Ownership			White Pine
Number	Number		National Forest	State & Private	Total	Land All Owners
			----- Acres -----			
1	20	Pete Creek	12,850	-	12,850	6,770
2	23	Spread Creek	6,100	-	6,100	4,170
3	25-27	Meadow-Hellroaring	5,780	-	5,780	4,710
3A	28	So. Fk. Meadow Cr.	3,770	-	3,770	3,770
4	29	Red Top Creek	7,030	110	7,140	3,500
4A	29	Cyclone Creek	3,060	60	3,120	1,900
6	30	Burnt Creek	7,250	-	7,250	6,300
8A	55	Lower Star Creek	3,670	-	3,670	2,800
10	59	No. Fk. Callahan Cr.	8,690	-	8,690	5,120
11	60	So. Fk. Callahan Cr.	10,110	-	10,110	2,930
15	64	Spar Lake	9,810	540	10,350	7,050
18A	188-190	Cherry Creek	10,110	550	10,660	6,610
Totals			88,230	1,260	89,490	55,630
1/Acres rounded off to nearest 10.						

Through the use of antibiotics, many small, isolated pole stands outside present BRC units can successfully be brought through to maturity. The inventory of such stands is not yet complete. However, white pine disease and stocking surveys now indicate 3,500 acres can be included in the program. It is estimated that at least an additional 5,000 acres can be logically added from areas not yet surveyed.

(2) Dwarfmistletoe

(a) Problem - Donald P. Graham of the Spokane Research Center, Intermountain Forest and Range Experiment Station, presents the following table in his "Dwarfmistletoe Surveys - Kootenai National Forest, 1957."

TABLE 19 - INCIDENCE OF DWARFMISTLETOE IN WESTERN LARCH STANDS
BY INFECTION CLASSES AND RANGER DISTRICTS
1957

Ranger District	Total miles of roadside strip Number	Proportion of Total Miles Traveled Through Western Larch Stands By Infection Classes				Dwarf- mistletoe free miles
		Dwarfmistletoe Infected Miles				
		Light	Moderate	Heavy	Total	
		-Percent-				
Fisher River	198.7	14	32	45	91	9
Libby	138.2	18	21	50	89	11
Troy	113.0	12	19	57	88	12
Warland	130.8	10	25	50	85	15
Yaak	105.3	17	19	35	71	29
Rexford	109.1	10	7	14	31	69
Fortine	98.6	5	1	1	6	94
All Districts	893.7	12	20	38	70	30

The effects of dwarfmistletoe infection on the host trees include reduced increment, increased mortality, lower timber quality and increased susceptibility to attack by insects and diseases. Larch is a preferred species for ASA poles; however, narrow sapwood, due to dwarfmistletoe infection below 5/8" width, renders poles unsuitable for treatment. Trees exhibiting sapwood widths below this limit are common.

The Kootenai Working Circle has a larch--Douglas-fir type equal to 54.5 percent of the total commercial area. Larch itself accounts for 43 percent of the sawtimber volume in the type and 28 percent of the total sawtimber allowable cut. Thus a deteriorating agent affecting 70 percent of larch stands has a tremendous effect on allowable cut throughout the rotation.

Occurrence of dwarfmistletoe on lodgepole pine was found over the entire working circle with some stands in every district infected. However, no analysis of intensity nor accurate distribution has been made.

Increasing utilization of lodgepole pine will require management to reduce dwarfmistletoe losses to a minimum. Douglas-fir, spruce, and ponderosa pine are presently relatively free of mistletoe.

(b) Policy - The physical removal of the parasite is the only means yet known of controlling dwarfmistletoe. In heavily infected stands, adequate protection by clear cutting is usually necessary. Stand improvement plans designed to eliminate the unmerchantable and residual trees from the cutover areas are needed to remove all chances for seed dispersal over established reproduction.

(c) Program - Logging to control dwarfmistletoe should proceed as rapidly as possible in infected larch areas. Clear cutting, with cutting or burning of infected residual, appears to be the only practical method that will permit healthy larch to be grown on the forest. Seeds are exploded from seed pods up to a lateral distance of 33 feet. This spread factor must always be considered in cutting methods and regeneration practices.

(3) Pole Blight (Western White Pine) - Pole blight has been discovered in the Kootenai Working Circle in three localities. Only one of these is found within a BRC unit (Spar Lake). Until the nature of the disease is completely understood, pole blight areas will be managed for other species. Salvage of pole blighted trees will be planned for all areas where the blight is severe and white pine is present in sufficient volume to make a sale economical.

The Keeler Creek drainage, which is in deferred status, was dropped from the program because of the presence of pole blight and the high cost of rehabilitation.

(4) Christmas Tree Blight (*Rhabdocline pseudotsugae* Syd.) - This is particularly damaging to Douglas-fir in some years and occasionally on widespread areas. Little is known on specific methods for control.

(5) Additional Diseases - *Peridermium* is occasionally found in spruce areas. Control will be by cutting and removing infected trees.

Elytroderma deformans has been located on a small area in ponderosa pine. Infected trees will be removed.

Wood rotting fungi are found in all species at overmaturity. Control will largely consist of cutting overmature condition classes on a priority basis. Since fungi also develop in crowded stands, intermediate and sanitation cuts designed to maintain good vigor characteristics will be made whenever possible and practical. The development of antifungicides will also be closely followed for possible use in controlling losses to fungi.

Hypodermella is frequently widespread on both larch and lodgepole pine. To date the detrimental effect has been in growth reduction; mortality has not been serious. No practical control method is yet known.

f. Fire Control

(1) Annual Losses and Occurrence - Losses from fire during the last ten-year period have been lighter than in any previous decade for which data are available. This can be attributed to favorable weather, expansion of the transportation system, improved fire detection, and suppression techniques and equipment, well distributed manpower including woods crews, and improved communication.

The average annual loss from fire during the past ten-year period was 261 acres or .0145 of one percent of the total area of net national forest or .0163 of one percent of nonreserved commercial forest land in national-forest ownership. Table 20 shows a further analysis:

TABLE 20 - FIRE ANALYSIS BY CAUSE AND AREA BURNED
1949 THROUGH 1958

NATIONAL FOREST LAND

Year	Lightning		Smoker		Railroad		Campfire		Debris Burning		Lumbering		Misc.		Reca- pitulation	
	No.	Area	No.	Area	No.	Area	No.	Area	No.	Area	No.	Area	No.	Area	No.	Area
1949	93	27.22	-	-	-	-	1	Spot	-	-	-	-	-	-	94	27.22
1950	13	.38	3	0.01	-	-	1	Spot	-	-	-	-	-	-	17	0.39
1951	22	2.75	1	Spot	-	-	2	0.02	1	.30	-	-	-	-	26	3.07
1952	31	8.15	6	5.22	-	-	4	1.94	1	7.00	-	-	-	-	42	22.31
1953	84	220.73	7	20.16	-	-	5	0.10	3	2.60	-	-	2	0.09	101	243.68
1954	31	0.46	-	-	-	-	1	0.04	-	-	1	8.00	-	-	33	8.50
1955	23	1.74	6	27.20	-	-	3	0.80	-	-	2	0.65	1	0.25	35	30.64
1956	53	6.47	6	Spots	-	-	3	Spots	1	0.05	-	-	1	Spot	64	6.52
1957	44	30.70	5	0.61	-	-	-	-	3	14.07	2	22.02	3	0.50	57	67.90
1958	100	774.81	3	0.50	3	1426.00	6	Spots	1	0.18	-	-	-	-	113	2201.49
Total	494	1073.41	37	53.70	3	1426.00	26	2.90	10	24.20	5	30.67	7	.84	582	2611.72

The table discloses that nearly 10 times as much area was burned over during 1958 as for any other year within the period, and was the only year approaching the burned area par of .072 or 1,702 acres within the protection boundary.

(2) Objective - Fire control replanning is scheduled for completion by the fall of 1960. A revision of par and the adequacy of the present protection organization will be major considerations. However, as an objective in reducing fire damage to timber and growing stock to an acceptable minimum, the following par for national-forest land is recommended:

To keep burned area to a ten-year average of 271 acres per year or .015 of one percent of net national forest acreage, with not more than 15 man-caused fires and not more than 3 C-D-E fires annually.

(3) Policy - The policy will be to meet or exceed the standards for prevention, presuppression and suppression as defined in the Forest Service Manual, Handbook, and Region One supplements thereto. Timber sale contracts, special use permits, etc., will contain adequate requirements for prevention measures, fire equipment and manpower to assure prompt and effective fire action. On sale areas where extra protection is necessary because undisposed seasonal slash or other reasons, sale slash disposal plans will require collection of additional funds for supplemental protection. (See discussion under Sales Policy - Slash Disposal.)

(4) Silvicultural Use of Fire - Prescribed burning as a means of providing good forest management will be utilized. It generally will be used to remove unmerchantable, decadent stands of cedar, hemlock or lodgepole pine, and occasionally for other species to prepare a good seedbed establishment of reproduction. Logged-over areas within white pine units will be control burned to prepare the area for planting and to destroy ribes. Destruction of brush, particularly Menziesii in the spruce-subalpine fir type and ninebark (Opulaster) in larch--Douglas-fir, may be accomplished through the use of fire where necessary for seedbed preparation.

g. Land Acquisition and Exchange

There are no plans for direct acquisition of additional land within the Kootenai Working Circle. Land for land exchange will be made, however, as opportunities occur to consolidate ownerships. In general, such transactions will involve exchange of national-forest land outside the forest boundary for other lands of equal value within the boundary.

Scattered national-forest lands in areas which are largely privately owned create an ownership pattern which is difficult and expensive to administer. This is particularly true of the Fortine Creek and Fisher River drainages. Suggested areas for consolidation of national-forest ownership are: (1) Fortine Creek from Swamp Creek to Eureka, (2) Lower Fisher River from Wolf Creek to the Kootenai River, (3) West Fisher, Silver Butte Fisher,

and East Fisher. In these areas, national-forest lands largely surrounded by private lands would be exchanged for private lands surrounded by national forest. The objective is to form solid blocks of national-forest land with a minimum of boundary line between national forest and private land.

Small private owners are the exchange proponents in area 1, while the St. Regis Paper Company is concerned with area 2, and the Northern Pacific Railway with area 3.

The State of Montana owns 42,286 acres of commercial forest land within the working circle. These lands are well scattered throughout the forest with the exception of the Yaak, Sylvanite, and west halves of the Warland and Rexford Districts where little or no State land occurs. Consolidation of State lands by exchange, possibly adjacent to the Stillwater State Forest, would appear to be mutually desirable.

To provide access to national-forest land for management activities planned for the next five years, a total of 218 rights-of-way easements across private land must be secured. Consolidation of national-forest ownership would in some cases eliminate the need for rights-of-way but would not be the complete solution to the problem.

9. COOPERATION

a. Other Federal Agencies

Where common interests overlap, coordinate planning and action programs with the Agricultural Conservation Program, the Soil Conservation Service, and all other agencies active continuously or intermittently within the working circle.

Cooperate with the Small Business Administration in allocation of annual sales program.

b. State Agencies

Coordinate planning with the Montana and Idaho State Fish and Game Departments regarding big game habitat and fisheries protection. Cooperate with the State Foresters in sawmill inspections, fire law enforcement, the Clark-McNary Section 2 Program, and slash disposal on private lands, and other cooperative Federal-State programs.

Work closely with the County Commissioners and other County officials on land-use planning, zoning, road systems and other mutually beneficial programs.

c. Private Forest Landowners

(1) Industrial Private - The St. Regis Paper Company, the Anaconda Company, and the Northern Pacific Railway own a combined acreage of commercial forest land of 292,090 acres. All of these corporations employ professional foresters. The Northern Pacific has held its lands largely in a custodial status, but St. Regis and Anaconda generally apply good forest management practices.

(2) Small Private - Small private owners control 147,347 acres within the working circle. Their problems are comparable to small owners elsewhere in the United States. Frequently the owner does not understand the principles of good forest management and is either economically unable to put them into effect or is unwilling to do so.

If properly managed, these lands could contribute significantly to the annual cut within the working circle.

The major needs are:

- (a) A dependable source of long-term, low interest forest credit.
- (b) Timber stand insurance.
- (c) Equitable recognition of the hazards of forest land ownership in tax structures.
- (d) Expansion of programs providing professional forestry advice and counsel.
- (e) Cooperative marketing associations to assure fair prices and a stable market for products.

Interest is being developed in good forest management by the State Service Forester located in Kalispell. Assistance is furnished landowners through the Cooperative Forest Management Program and incentives are available through the Agricultural Conservation Program tree planting and stand improvement practices.

There has been a trend in recent years for private owners to place their forest lands under management for Christmas trees. This practice has increased cash crop income materially and has tended to improve land management practices generally. However, saw log management is not generally carried on concurrently with Christmas tree production.

d. Private Organizations

Work with the Kootenai National Forest Advisory Council for better understanding, acceptance and improvement of national-forest programs, policies, and impacts upon the use and development of national-forest resources.

Assist local sportsmen's groups to obtain factual information upon which to base sound recommendations for fish and game management to the State Fish and Game Commissions.

Cooperate with community officials and the County Health Officer on matters pertaining to management and protection of municipal watersheds.

Inform local forest users on the aims and objectives of cutting methods, silvicultural treatments, slash disposal, insect and disease control and other functions of timber management. Plan demonstration areas to tell the story by utilizing signs and exhibits. These media will also be helpful in encouraging proper forest management on all ownerships generally.

e. International

Upon infrequent occasions it is necessary to remove insect infested timber from drainages flowing into Canada, where no practical tie to the present American transportation exists. Transportation arrangements involving crossing of the International Boundary always involve coordination with American and Canadian Customs Services.

10. PROPOSED MAJOR DAMS AND RESERVOIRS

There are two major flood control dams proposed within the working circle boundaries, which, if constructed, will have a tremendous impact on local economy, transportation, administration, and coordination of uses, particularly recreational use. Following is a more specific discussion:

a. Libby Dam

Proposed by the Corps of Engineers, Libby Dam (at Site 1) would be large, creating a reservoir 107 miles long--42 miles of which would be in Canada. Benefits in the way of power generation and flood control to the Columbia River System would also be big. The Corps of Engineers has estimated that 308 MM dollars will be needed for construction and that a benefit-cost ratio of 2 to 1 will result.

There are two proposed locations, neither of which has been definitely selected, so far as is known.

(1) River mile 204.9 above the confluence of the Kootenai and Columbia Rivers--approximately 3 miles above Libby.

(2) River mile 217.0--approximately 15 miles above Libby.

In August of 1953, Region One published "The Impact of the Proposed Libby Dam upon the Forest Economy of Lincoln County, Montana." This study analyzes three alternative transportation systems should the dam be built at river mile 204.9, and two alternative systems if river mile 217.0 is selected. All impacts are covered exhaustively and no attempt shall be made here to duplicate that work, except as seems necessary to give a thumbnail sketch of the general effect on this management plan.

The following table, extracted from the above report, shows the more important impacts upon land:

CHARACTER OF LAND WHICH WOULD BE FLOODED
BY A DAM WITH A CREST 2,459 FEET ABOVE SEA LEVEL

	Lower Site	Upper Site
	- - - - -Acres-	- - - - -
Cultivated and improved pasture	2,100	1,800
Natural grassland	7,000	6,200
Forests	15,500	10,100
Waste, barren, brush, roads, railroads, etc.	8,900	8,500
Townsites	200	200
Riverbeds, sloughs	4,300	3,400
Total	38,000	30,200

In either case, about one-tenth of cultivated area within the working circle would be flooded, and about two-tenths of one percent of the total nonreserved commercial forest area would be inundated. An estimated three percent of the local tax base would be submerged.

The reservoir will be a distinct handicap to fire control, administrative travel and log transportation, since principal travel routes are now in the Kootenai River Canyon and lateral roads radiate from them. Even if replaced by adequate systems on either side of the reservoir, the impoundment itself will impose limitations in time and distance. Costs of replacement roads will be great due to rockiness of the terrain on either side of the reservoir area.

Recreational possibilities will be tremendously increased, bringing attendant needs for campgrounds, picnic areas, docking facilities and the like which must be coordinated with fire hazard reduction and transportation needs for the timber resource.

An abundance of electric power, generated at the dam, would have significant influence in encouraging establishment of a pulp mill locally and should also help to bring remanufacturing facilities into the area. The dam will also regulate streamflow for dilution of pulp mill wastes.

b. Long Meadows Dam^{1/}

This dam is proposed on the Yaak River near the mouth of Pete Creek in Section 5, T35N, R32W, MPM. The reservoir pool level will be at 3,100 feet above sea level, extending 19 miles upstream and inundating 7,540 acres. Of this area, 2,700 acres are in national-forest ownership and the balance is private.

The impoundment presents the same problems in transportation systems, (except that no railroad is involved), fire control, administration and coordination of uses as does Libby Dam. However, these problems are much less acute and can be resolved at greatly reduced costs. Proportionately, the impact upon wildlife would be greater at Long Meadows. The winter range area for the relatively small whitetail deer herd summering in the Upper Yaak is predominantly within the flowage area. The Yaak River is now an important fishery for native black spotted and rainbow trout.

National-forest commercial forest area of 910 acres presently containing 16,000 M b.m. of sawtimber and 1,790 acres of convertible products estimated at 14,000 cords will be inundated. Forested private land amounting to 3,715 acres estimated to contain 3,500 M b.m. and 27,500 cords of other products is found within the flowage area.

Construction of the dam is expected to increase the recreational use of the area some thirty times and will be especially attractive since the reservoir will be full or nearly so from June 1 to September 15 each year.

11. RESEARCH NEEDS

From a sales program standpoint, the most pressing need for research is in connection with the rate of deterioration to be expected under varying degrees of intensity of dwarfmistletoe infection in larch. Donald Graham of the Spokane Research Center, has reported 70 percent of the Kootenai larch stands as infected to some degree. Since larch comprises 28 percent of the total allowable sawtimber cut for the working circle, it becomes imperative to know, within relatively narrow limits, the growth decline and life expectancy of individual stands.

As a corollary, additional information is needed on rate of infection spread, peripheral reinfection potentials, and possible stopgap control methods as an alternative to clear cutting.

If larch is to comprise a relatively stable proportion of allowable cut throughout the rotation, these answers must be obtained.

The dwarfmistletoe problem in lodgepole is similar, although no concrete analysis of distribution has been made. However, lodgepole furnishes 12.8 percent of the allowable annual sawtimber cut and 55.7 percent of the other products allowable annual cut.

^{1/}See FP-COOPERATION-Corps of Engineers 308 Report - Proposed Long Meadows Project - 1957.

Methods and practices of disposal of roadside slash to coordinate alleviation of fire hazard, reduction of insect buildup potentials, erosion prevention requirements, and aesthetic values need research evaluation.

Additional information concerning types and placement of sale area erosion control structures by soil types, exposure, topography and runoff amount, and characteristics is a critical need.

Guides for intermediate cuts in the larch--Douglas-fir and lodgepole pine types will be needed, particularly when a market for other product volume becomes established. Proportion of live crown to total height, spacing requirements, and influence of crown class upon ability to respond to release are examples.

Continuing research in the fields of utilization, power pole production, the use of antibiotics in disease control, and methods of controlling Douglas-fir bark beetle is needed if full use and development of timber resources is to be obtained.

E. SUPPORTING DATA

1. HISTORY

The first recorded entrance of white men into the area occurred in 1808 when David Thompson and his agents explored the country in search of furs. Aside from a few fur traders, no white people lived in the area until after discovery of gold by Captain Libby in 1865. An influx of prospectors followed the gold strike and several isolated mining camps were established but soon abandoned. By 1880, settlers were moving into the Tobacco River Valley and Fortine Creek in search of farm lands.

In 1892, the Great Northern Railroad completed its track westward and the towns of Libby and Troy were settled. The original route through Kalispell, Montana, was changed in 1901 to a route down the Tobacco River through Eureka, Montana; and down the Kootenai River to Bonners Ferry, Idaho.

A large sawmill was built at Libby in 1906. After several changes in ownership during its early existence, this mill has operated with few interruptions to the present date. At about the same time, two other large mills were built--one at Eureka, and one at Warland, Montana. Both of these mills were out of operation by 1926.

By 1920 farming activity, except for cattle raising, had reached its peak and has since declined until much of the original farm land has reverted to forest cover.

Mining likewise enjoyed but a short period of prosperity, the sole exception being the Zonolite mine located near Libby. The ore mined here is vermiculite, a base material for insulating products.

Early timber cutting was restricted almost entirely to the more accessible lands in private ownership. The demand for national-forest timber was comparatively small until as late as 1942. The average annual cut from national-forest lands from 1909 to 1942 was only 12.6 MM feet, and in only two years during this period was the cut in excess of 25.0 MM feet. Of this amount, sixty percent was ponderosa pine and white pine.

Timber now remaining on lands of small private ownership is rapidly being depleted and the demand for national-forest timber is becoming increasingly acute.

Early logging methods involved construction of many miles of logging railroads which contributed little to the development of a permanent transportation system.

With the construction of the Great Northern Railroad, a stable market for cross ties developed. Ties were at first hewn but later sawn in small portable circular mills. As many as 40 of these mills have operated at the same time in the Eureka and Rexford area alone. Until about 1942, over 90 percent of the total production of these small mills came from privately owned lands. Most are now dependent upon national-forest timber. Although tie mill utilization is not complete, these mills utilize small, low quality material, the removal of which has been uneconomical for the average saw log operation.

2. PHYSIOGRAPHY

a. Topography

The Kootenai Working Circle is drained primarily by the Kootenai River and its tributaries. The direction of flow is almost due south from the Canadian boundary for a distance of about 42 miles to its confluence with the Fisher River, then west for 27 miles to Troy, Montana, and finally 13 miles northwest to the Idaho State line at Leonia. At the Idaho State line, the elevation is 1,800 feet, the lowest point in Montana. Elevations vary within the working circle from 1,800 to 8,000 feet.

Commercial timber is distributed from the valley bottoms to above 6,500 feet in elevation.

The principal tributaries to the Kootenai River are the Tobacco River, Fisher River, Libby Creek, Lake Creek, and the Yaak River. With the exception of parts of the precipitous Kootenai River face, nearly all of the nonreserved commercial land is operable under modern logging methods.

b. Soils

Soils along the lower Kootenai River are primarily sedimentary in origin, consisting of layers of clay, gravel and sand. During the Pleistocene period, the lower Kootenai was a vast lake with its outlet at the low divide between the head of Lake Creek and Bull River, a tributary of the Clark Fork River.

Most of the remaining soils are of glacial origin to an elevation of above 5,000 feet where solid rock outcrops are common. These soils are suitable for growing trees but are not productive for agricultural purposes.

c. Climate

The average annual precipitation at the Libby Ranger Station for the past 10 years is 20.8 inches. This is generally lower than the average for the west side of the working circle and higher than for the east central portion. July, August, and generally September are the drier months with a high occurrence of lightning storms. Much of the annual moisture comes in the form of snow at elevations above 3,500 feet, where it normally remains for nearly 6 months each year.

Temperatures range from a mean 20° F. in winter to 70° F. in summer, with recorded extremes from -42° F. to 105° F. Low elevations are characterized by little wind, while the higher elevations are subject to extreme wind velocities. In 1949, more than 200 MM board feet of timber was windthrown in a single storm in which wind velocities in excess of 100 miles per hour were recorded.

3. ECONOMY

a. Communities

All of the communities within the working circle are situated along the Great Northern Railroad. All are dependent upon the lumbering or forest products industries as the principal source of revenue, and local economy fluctuates with the trends of this industry.

The principal towns are Libby, Troy, Eureka, and Rexford. Minor communities include Warland, Fortine, Stryker, and Trego. Libby is the largest of these towns and is the county seat for Lincoln County. The present population of Libby and vicinity is about 6,500--an increase of 35 percent since the 1950 census. Other communities have remained more or less stable. The population of Troy is approximately 900, Eureka 1,100, and Rexford 300. Warland, Trego, Fortine, and Stryker are small communities of not more than 100 residents each.

b. Industries

The principal industries within the working circle, in order of importance, are lumbering, farming (mainly cattle raising), and mining. It is probable that total payroll contribution from operation and maintenance of the Great Northern Railroad would exceed that from mining.

The only operating mine is the Zonolite Company, a producer of insulating material, which was active intermittently from 1919 to 1934 and since that time has been in steady production. For the past 10 years an average of 110 men have been employed continuously.

There are approximately 100 farms engaged to some degree in cattle raising. About 15 percent of the farms provide an independent living and the balance produce only enough to supplement other forms of income.

The largest sawmill, located at Libby, Montana, is owned by J. Neils Lumber Company, a division of the St. Regis Paper Company. In connection with the sawmill, this company also operates a large pressure treating pole plant, a box factory, presto-log plant, and grain door manufacturing plant.

The J. Neils Company also completed construction of a smaller band mill at Troy, Montana, in 1956. This mill has operated continuously since completion. The Libby operation has recently added a high production stud mill for processing small mixed timber.

Total employment for the Troy and Libby operations averages about 1,000 men in the mill and woods. An additional 350 men are employed in the woods by subcontractors during the logging season.

The following table shows the principal established mills within the working circle, their average annual cut, and product produced:

Operator	Montana Location	Average Annual Cut MM bd.ft.	Principal Product
J. Neils Lumber Company	Libby	93.5	Finished lumber
J. Neils Lumber Company	Libby	9.0	Poles
J. Neils Lumber Company	Troy	18.0	Green & finished lumber
Tobacco River Lumber Co.	Eureka	8.0	Surfaced & rough green
Osler Brothers	Fortine	8.0	Surfaced & rough green
Ksanka Lumber Company	Fortine	6.0	Surfaced green studs
W. C. Albee	Eureka	6.0	Surfaced green studs
Kennedy-Stevens	Eureka	5.0	Surfaced green studs
O. N. Parker	Fortine	3.0	Surfaced air dried studs
Leighty Brothers	Troy	10.0	Rough green lumber
Trojan Stud Mill	Troy	2.5	Rough green studs

There are also about 30 small portable tie, stud and cant mills that operate sporadically from year to year depending upon the local tie and stud market.

In addition, there are mills located outside the eastern and western boundaries of the working circle which vigorously compete for Koctenai timber.

c. Annual Cut - National Forest

Volumes cut from national-forest lands during the past 10 years were as follows:

ANNUAL CUT - NATIONAL FOREST

Year	Species				Other	Total Saw Logs	Convertible Products	Total Volume
	WP	PP	L	DF				
1949	7,520	12,470	19,210	12,340	2,530	56,210	6,380	62,590
1950	2,830	6,010	19,180	9,850	2,680	44,740	5,303	50,043
1951	2,720	5,620	24,320	13,070	5,450	58,850	11,770	70,620
1952	2,210	960	26,910	16,110	4,340	106,240	8,340	114,580
1953	1,500	3,340	15,600	12,150	3,010	104,070	2,360	106,430
1954	5,170	5,710	18,730	18,200	6,790	171,390	1,710	173,100
1955	4,330	6,160	24,720	25,250	6,880	255,490	4,430	259,920
1956	8,568	5,680	27,770	18,850	11,360	233,638	6,172	239,810
1957	16,045	3,080	38,340	23,650	11,550	145,905	6,515	152,420
1958	8,124	4,215	38,199	17,213	22,139	142,163	3,181	145,344
Total	59,017	53,245	252,979	166,683	76,729	1,318,696	56,161	1,374,857
Average	5,902	5,325	25,298	16,668	7,673	131,870	5,616	137,486
Percent								
Total	4.5	4.0	19.2	12.6	5.8	100.0		

The average cut from national-forest lands for the past 10 years is about 75 percent of the total volume produced from all ownerships within the working circle. Of the total private timber cut within the working circle, about 80 percent comes from lands in large private ownerships which are to a large extent on a managed basis.

The future cut from such lands is expected to be on a reasonably stable and continuous basis. Available cut from lands in small private ownership will continue to decline.

There have been several studies by industry of the feasibility of utilizing the wood resources of the working circle for support of a local pulp mill. At least one of these has been comprehensive.

Since there are numerous factors in addition to available wood supplies which determine the practical location and capacity of a pulp mill, it is difficult to predict whether pulp mill establishment is imminent in or adjacent to the working circle. However, discussions indicate that round wood supplies are considered adequate for a sizable plant.

4. REFERENCES

- a. Timber Management Plans on the National Forest, L. S. Gross, 1950.
- b. Field Instructions for Forest Survey 1956-1957 with Region One supplementary material.
- c. Table of Yield and Mean Annual Increment of Fully Stocked Stands in Major Forest Types in Region One - 1957.
- d. Net Annual Growth per Acre for Sawtimber and Pole Stands in Montana. NRM-FRX 1939.
- e. Check List of Natural and Naturalized Trees of the United States, USDA Handbook #41, 1953.
- f. Forest Terminology - A Glossary of Technical Terms Used in Forestry - SAF, 1944.
- g. Tabular Check Method covered in letter to files from Donald M Mathews - S-PLANS-Timber Management, October 19, 1951, with cover letter to forest supervisors and rangers 12/12/51 in reference file in supervisor's office.
- h. Coordinated annual harvest and road plan.

i. Basic Material Used in Kootenai Plan - 1957.

(1) Photos Used

(a) Idaho Portion

Forest Service - 1935 Project 29A - "P" 1:17800

(b) From Idaho State Line east to 115°00 Longitude

Forest Service 1947 to 1949 Project 95A D.E.G. 1:20000

(c) East of 115°00 Longitude

Commodity Stabilization Service 1955 D.R.I. and M.I. 1:20000

(d) Special Pictures of Spruce Cutover

Forest Service 1956 Project 116A Area 15 D.R.I.-A, Area 18 D.R.I.-D, Area 19 ECR, Area 21 D.R.I.-F, Area 24, D.R.I.-I and Rejects from Areas 16, 17, 20, 22, 23, 25, 26, and 27
1:15,840

(2) Maps

(a) Idaho Portion

Yule Aerial photo township strip maps for T57N, 58N, 59N, 60N and 61N Idaho - Boise Meridian

(b) Balance of Forest Planimetric Base 15' Quads.

815-2-1	815-1-1	814-2-1
815-2-2	815-1-2	814-2-2
815-2-3	815-1-3	814-2-3
815-2-4	815-1-4	814-2-4
815-3-1	815-4-1	814-3-2
815-3-2	815-4-2	814-3-3
815-3-3	815-4-3	
815-3-4	815-4-4	
715-2-1	715-1-1	
	715-1-2	

j. Conversion and Other Adjustment Factors Used in This Plan - 1957

Species	Cubic Feet/Board Feet Ratio (Scribner) for		Factor for Hidden Defect and Breakage	
	Sawtimber Trees		Percent	Percent
	Sawtimber Stands	Pole Stands	Of Cubic Volume	Of Bd.Ft. Volume
White pine	5.1	4.8	7	14
Ponderosa pine	5.3	4.7	2	4
Larch	5.3	4.7	4	14
Hemlock	5.0	4.6	12	25
Grand fir	5.0	4.4	6	14
Alpine fir	4.6	4.4	6	14
Douglas-fir	4.9	4.6	5	12
Engelmann spruce	5.2	4.8	5	11
Lodgepole pine	4.7	4.6	4	8
Whitebark pine	4.7	4.6	4	8
Cedar	4.8	4.3	12	30
Cottonwood	4.9	4.5	5	10
Aspen & Birch	4.8	4.6	5	10

The table above was used in net average acre volume tables from forest survey and supplemental inventory plots.

Lodgepole pine type acreages were adjusted in the following manner for use with Kemp formula:

- (1) Lodgepole pine sawtimber acreage = all of acreage used.
- (2) Lodgepole pine pole acreage = pole acreage - $\left(\frac{\text{Saw log area} + \text{Pole Area}}{2} \right)$
- (3) Lodgepole pine seedling acreage = $\frac{\text{seedling acreage}}{2}$

Nonstocked acreage used in Kemp formula was reduced by 9,000 acres to compensate for area for which there are no immediate plans for regeneration. All board feet tables are in Scribner Rule.

5. WORKING THE PLAN

This management plan shall be used as a tool to assist in preparation of annual or periodic plans and programs as follows:

a. Annual Plans

(1) Five-Year Timber Access Road Plan and Cutting Budget. Individual sale areas will be planned to coordinate with the cutting budget, necessary road development, and right-of-way procurement sufficiently in advance to provide orderly progress.

(2) Five-Year and Annual Planting Plans will be based upon productivity surveys and will be coordinated with the sales program and nursery production.

(3) Stand improvement and sale area betterment plans will be prepared and coordinated annually with individual sale plans or P&M TSI project plans.

b. Control Records

Systematic records shall be kept by blocks as follows:

(1) Annual and cumulative cut record by species of regulated sawtimber volume and area cut over.

(2) Annual and cumulative cut record by species of regulated other product volume and area cut over.

(3) Annual and cumulative cut record by species of unregulated sawtimber volume.

(4) Annual and cumulative cut record by species of unregulated other product volume.

(5) A master list of sales of 1,000 M or over, showing: Map index number, purchaser, sale date, location, major cutting practice, and silvicultural treatment utilized. Where planting is done from K-V funds, it must be shown as a treatment. In addition, a map record showing advertised sale boundaries and containing an index number reference to the above list.

(6) A record of productivity surveys made and results shown. These surveys to be accomplished no earlier than 2 years nor no later than 5 years after cutting.

(7) A planting record consisting of a map showing location of plantations indexed to a data sheet showing dates of planting, species, and age class planted, and the record of survival checks.

(8) A record of intensive timber cruises showing map index number, location of areas, date, cruising intensity, utilization standards used, and a summary of volume by species and product class.

(9) T.S.I. accomplishment record consisting of two parts:

(a) Map - On a township base showing locations of areas treated, type of treatment by symbol and index reference to atlas sheet.

(b) Atlas Sheet - Sale designation, location, date of work, type of work by units of measure, and a record of accomplishment by man-days spent. In addition, there shall be a record of K-V plan and accomplishment as a permanent record in sale folders.

(10) A map record of sale area slash disposal accomplishment shall be kept by location, map index number (keyed to master index paragraph 5), showing by standard legend the method of disposal used.

Records concerning cut shall be maintained on a calendar year basis and brought up to date by February 1st annually. Other records shall also be maintained on a fiscal year basis but shall be posted at the end of the normal operating season for such work; i.e., slash disposal by January 1, T.S.I. by January 1 and June 30, cruising by May 1, planting by June 30, and productivity by November 1.

APPENDIX
KOOTENAI WORKING CIRCLE
KOOTENAI NATIONAL FOREST
TIMBER MANAGEMENT PLAN

INVENTORY TECHNIQUE AND ACCURACY

TECHNIQUE

The basic inventory data upon which the plan is based were secured from aerial photointerpretation and area determination work done by forest personnel in 1956 and 1958, volume and growth samples taken by forest personnel in 1956 and 1957, and Forest Survey samples taken in 1952 and 1956. The work was done in accordance with instructions for timber management planning issued by Region One in 1955 and 1956 and with "Field Instructions for Forest Inventory" prepared by the Intermountain and Rocky Mountain Forest and Range Experiment Stations.

In brief, the technique involved: (1) delineation of forest condition classes by type, size class, and stocking on recent aerial photographs (taken in 1947, 1954, and 1956); (2) field checking strata classifications for accuracy; (3) transfer of delineated type strata from photographs to 2" planimetric maps; (4) calculations of acreages by type areas for compartments and the working circle; (5) sampling each important strata containing 5,000 acres or more; (6) computation of average volumes by strata; (7) application of average volumes by strata to strata acreages to secure inventory volumes for the working circle and parts thereof; and (8) tests for accuracy to determine how close the resulting sampling error came to regional timber management planning objectives.

ACCURACY

Accuracy of the basic data is dependent upon the magnitude of two types of errors: (1) human error and (2) sampling error. Both can be minimized or controlled. Human errors are the result of poor judgment and mistakes made in any of the forementioned phases of the work. They can be minimized by thorough training, careful field measurements, precise office work, and proper supervision, but they cannot be assessed numerically. Sampling errors, on the other hand can be evaluated.

Sampling errors are expressions of reliability of an estimate, or an inventory, when only a part of the whole or a sample is measured. The greater the portion of the whole which is sampled, the lower the error and vice versa. If all of the population is measured, as for instance, all trees on every acre, the sampling error would be reduced to zero. Because time and money nearly always forbid this, a sample is taken and some sort of error invariably results. This error is always linked with the laws of probability.

Standard errors made in taking the cubic foot inventory are shown in the following table. The error of ± 3 percent for one standard deviation for all strata means that the total cubic volume for the working circle shown in the inventory may be expected to fall within the range of ± 3 percent from the true volume (if secured from a 100 percent sample) about two times out of three (one S.D.). One time out of three, whenever the same number of sampling plots are taken for inventory purposes, the results may be expected to depart by more than ± 3 percent from the true amount.

Highlights of the coefficient of variation and the sampling error based on cubic foot volume for trees 5 inches and larger for the various strata of the Kootenai Working Circle are as follows:

Strata	Coefficient of Variation - Percent	(1 SD) Sampling Error Percent
W9W	58	14
W9M	39	<u>12</u>
Total White Pine		10

P9M	70	21
L-DF9W	50	16
L-DF9M	56	<u>9</u>
Total Larch--Douglas-fir		<u>8</u>

C9W	48	23
C9M	47	<u>21</u>
Total Cedar		<u>15</u>

S9W	52	26
S9M	21	6
S9P	36	<u>11</u>
Total Spruce		<u>10</u>

L8W	82	27
LP8W	17	6
LP8M	63	<u>31</u>
Total Lodgepole Pine		<u>12</u>

TOTAL ALL		3

Standard errors in terms of board feet have been running about one percent higher than for cubic feet. Should this be the case here, the standard error would be ± 4 percent, or ± 439 MM board feet and the inventory volume would be stated as $\pm 10,978 \pm 439$ MM board feet. This is within the regional objective of 10 percent for a working circle and 5 percent for a national forest two times out of three, set up as maximum. To be reasonably certain of holding the final error within tolerable limits, an analysis was made at the beginning of the sampling job, to find out how many plots would need to be taken in each strata. Permissible limits of error, as stated in the regional letter of instructions for timber management planning of March 6, 1956, were observed.

TABLE 1

APPENDIX

AREAS OF COMMERCIAL STOCKED AND NONSTOCKED, NONCOMMERCIAL, NONFOREST & UNWEATHERED WATER - UNRESERVED
NATIONAL FOREST LANDS WITHIN THE KOOTENAI WORKING CIRCLE BY RANGER DISTRICT AND STRATA

(RANGER DISTRICT OR BLOCK)

STRATA	REXFORD	SYLVANITE	FORTUNE	TROY	LIBBY	FISHER RIVER	WARLAND	YAAK	GRAND TOTAL
	1	2	3	4	5	6	7	8	
(AREA IN ACRES)									
COMMERCIAL									
W9W	-	1,810	1	5,362	1,722	372	-	2,520	11,786
9M	395	1,467	27	2,827	6,500	809	192	-	12,217
9P	-	95	-	20	850	40	-	-	1,005
Sub 9P	395	3,372	27	8,209	9,072	1,221	192	2,520	25,008
W8W	-	730	-	1,800	19	-	-	-	2,549
8M	-	583	232	109	243	-	-	-	1,167
8P	-	-	-	-	59	-	-	-	59
Sub W8	-	1,313	232	1,909	321	-	-	-	3,775
W7W	-	-	-	541	590	-	-	-	1,131
7M	-	-	-	35	24	-	-	-	59
7P	-	-	-	-	136	-	-	-	136
Sub W7	-	-	-	576	750	-	-	-	1,326
P9W	56	250	43	1,035	628	3,483	568	-	6,063
9M	13,634	2,395	724	6,966	14,719	28,324	24,868	87	91,717
9P	10,059	1,570	203	4,353	19,297	13,349	12,116	-	60,947
Sub P9	23,749	4,215	970	12,354	34,644	45,156	37,552	87	158,727
P8W	60	-	40	-	542	430	35	-	1,107
8M	94	94	201	-	2,921	1,185	471	-	4,966
8P	55	65	256	45	3,950	719	408	-	5,498
Sub P8	209	159	497	45	7,413	2,334	914	-	11,571
P7W	-	-	14	25	107	-	5	-	151
7M	-	-	11	-	755	88	37	-	891
7P	-	25	82	-	464	306	282	-	1,159
Sub P7	-	25	107	25	1,326	394	324	-	2,201
LP9W	-	-	4,146	75	101	405	-	2,456	7,183
9M	1,298	345	5,315	1,186	-	216	-	4,659	13,019
9P	129	373	1,920	432	24	260	-	3,464	6,602
Sub LP9	1,427	718	11,381	1,693	125	881	-	10,579	26,604

TABLE A (Continued)

STRATA	REXFORD	SILVANTIE	KORTINE	TROY	LIBBY	FISHER -RIVER:	WARLAND	YAAK	GRAND TOTAL
	1	2	3	4	5	6	7	8	
LP8W	29,227	4,276	9,148	6,738	21,009	21,697	10,292	20,508	122,895
8M	3,660	3,534	4,810	1,339	8,525	13,786	15,248	6,721	57,623
8P	1,937	1,547	3,809	268	5,438	1,626	258	1,149	16,032
Sub LP8	34,824	9,357	17,767	8,345	34,972	37,109	25,798	28,378	196,550
LP7W	7,941	6,052	12,027	961	10,881	3,947	5,188	16,073	63,070
7M	2,345	1,056	5,506	515	585	632	704	2,147	13,490
7P	179	2,255	4,102	406	1,276	1,088	-	1,332	10,638
Sub LP7	10,465	9,363	21,635	1,882	12,742	5,667	5,892	19,552	87,198
L-DF9W	12,765	12,126	23,603	38,034	19,237	9,102	3,175	32,874	150,916
9M	60,938	24,592	54,887	35,569	47,515	64,419	50,258	40,554	378,732
9P	15,351	10,347	42,771	16,317	44,179	17,092	4,557	19,741	170,355
Sub L-DF9	89,054	47,065	121,261	89,920	110,931	90,613	57,990	93,169	700,003
L-DF8W	9,882	21,988	7,180	11,103	18,571	10,478	6,677	19,160	105,039
8M	5,510	8,839	7,571	2,228	7,369	13,824	14,630	4,991	64,962
8P	1,137	2,408	6,906	1,034	2,968	2,695	551	540	18,239
Sub L-DF8	16,529	33,235	21,657	14,365	28,908	26,997	21,858	24,691	188,240
L-DF7W	850	5,018	8,331	1,399	3,034	682	842	1,380	21,536
7M	364	3,736	1,021	433	1,158	556	206	395	7,869
7P	121	256	716	590	1,253	276	45	-	3,257
Sub L-DF7	1,335	9,010	10,068	2,422	5,445	1,514	1,093	1,775	32,662
S-DF9W	11,927	8,521	7,017	3,202	542	170	333	13,895	45,607
9M	17,825	15,702	10,464	16,018	9,604	3,736	2,792	10,844	86,985
9P	8,405	7,701	16,237	11,613	7,946	1,110	778	5,030	58,820
Sub S-DF9	38,157	31,924	33,718	30,833	18,092	5,016	3,903	29,769	191,412
S-DF8W	1,046	1,343	115	911	310	130	738	614	5,207
8M	624	1,655	170	802	1,135	95	738	746	5,965
8P	275	1,283	4,831	215	1,114	231	69	235	8,253
Sub S-DF8	1,945	4,281	5,116	1,928	2,559	456	1,545	1,595	19,425
S-DF7W	-	370	311	285	161	-	5	-	1,132
7M	19	6,358	376	169	-	86	157	1,433	8,598
7P	85	1,289	356	101	-	6	-	-	1,746
Sub S-DF7	104	8,017	1,043	464	161	92	162	1,433	11,476
C-9W	-	3,162	-	13,754	85	255	-	65	17,321
9M	58	702	-	4,230	843	290	366	-	6,489
9P	-	381	-	1,049	283	-	-	-	1,713
Sub C9	58	4,245	-	19,033	1,211	545	366	65	25,523

TABLE I (Continued)

STRATA	REXFORD	SYLVANITE	FORTUNE	TROY	LIBBY	FISHER RIVER	WARLAND	YAAK	GRAND TOTAL
	1	2	3	4	5	6	7	8	
C8W	-	80	-	62	-	-	-	-	142
8M	-	-	32	-	50	-	93	-	175
8P	-	-	-	-	-	-	-	-	-
Sub C8	-	80	32	62	50	-	93	-	317
C7W	-	-	-	55	-	-	-	-	55
7M	-	-	-	54	-	-	-	-	54
7P	-	15	-	-	-	-	-	-	15
Sub C7	-	15	-	109	-	-	-	-	124
C09W	-	-	-	10	-	-	-	-	10
9M	61	-	37	205	137	-	-	-	440
9P	-	-	164	-	367	-	-	-	531
Sub C09	61	-	201	215	504	-	-	-	981
C08W	-	-	-	-	18	-	-	-	18
8M	-	-	13	-	43	-	-	-	56
8P	-	-	-	-	190	-	-	-	190
Sub C08	-	-	13	-	251	-	-	-	264
Total									
Stocked	218,312	166,394	245,725	194,389	269,477	217,995	157,682	213,613	1,683,587
Non									
Stocked	3,152	2,236	2,526	947	3,433	4,565	969	1,735	19,563
Total									
Commercial:	221,464	168,630	248,251	195,336	272,910	222,560	158,651	215,348	1,703,150
NCF	125	199	45	8,929	10,271	4,933	174	542	25,218
WATER	-	-	246	405	121	116	-	29	917
NF	1,817	729	10,172	4,401	7,544	1,448	189	2,309	28,609
TOTAL									
UNRESERVED									
AREA	223,406	169,558	258,714	209,071	290,846	229,057	159,014	218,228	1,757,894
NF RES.	-	-	-	15,750	28,339	2,970	-	-	47,059
GROSS NF	223,406	169,558	258,714	224,821	319,185	232,027	159,014	218,228	1,804,953
STATE	2,608	-	6,929	3,671	7,345	19,949	4,280	-	44,782
INDUSTRIAL:	3,752	707	120	32,940	35,618	206,865	18,011	1,517	299,530
OTHER	41,894	8,046	81,840	17,404	28,073	11,229	7,488	7,954	203,928
GROSS AREA:	271,660	178,311	347,603	294,586	418,560	473,040	188,793	227,699	2,353,193

KOOTENAI WORKING CIRCLE

TABLE 1 A

TOTAL LAND AREA AND COMMERCIAL FOREST LAND AREA BY FOREST TYPE, STRATA AND OWNERSHIP

STRATA	NATIONAL FOREST	STATE	TOTAL PUBLIC	J. NEILS	NORTHERN PACIFIC	ANACONDA	TOTAL* INDUSTRIAL PRIVATE	SMALL PRIVATE	TOTAL PRIVATE	TOTAL
COMMERCIAL										
AREA IN ACRES										
W9W	11786	16	11802	25	169	-	194	72	266	12068
M	12217	21	12238	32	543	-	575	142	717	12955
P	1005	42	1047	22	16	-	38	11	49	1096
8W	2549	-	2549	-	-	-	-	-	-	2549
M	1167	-	1167	-	-	-	-	-	-	1167
P	59	-	59	-	-	-	-	-	-	59
7W	1131	-	1131	15	-	-	15	-	15	1146
M	59	-	59	-	-	-	-	-	-	59
P	136	-	136	-	-	-	-	-	-	136
P9W	6063	912	6975	8702	690	-	9392	334	9726	16701
M	91717	7405	99122	55494	9434	6157	71085	5087	76172	175294
P	60947	5585	66532	18092	3339	250	21681	8978	30659	97191
8W	1107	8	1115	238	390	90	718	585	1303	2418
M	4966	230	5196	897	455	144	1496	4658	6154	11350
P	5498	435	5933	1145	284	19	1448	5111	6559	12492
7W	151	5	156	1167	32	-	1199	415	1614	1770
M	891	263	1154	588	-	-	588	1998	2586	3740
P	1159	-	1159	259	323	-	582	443	1025	2184
LP9W	7183	185	7368	228	-	-	228	119	347	7715
M	13019	58	13077	232	-	-	232	51	283	13360
P	6602	-	6602	288	-	-	288	50	338	6940
8W	122895	581	123476	5917	7610	684	14211	4649	18860	142336
M	57623	492	58115	2284	5813	1093	9190	1978	11168	69283
P	16032	198	16230	147	1293	-	1440	1560	3000	19230
7W	63070	152	63222	1297	1669	34	3000	1915	4915	68137
M	13490	5	13495	20	833	111	964	915	1879	15374
P	10638	65	10703	211	196	-	407	806	1213	11916

TABLE 1 A (Continued)

STRATA	NATIONAL FOREST	STATE	TOTAL PUBLIC	J. NEILS	NORTHERN PACIFIC	ANACONDA	TOTAL*	INDUSTRIAL PRIVATE	SMALL PRIVATE	TOTAL PRIVATE	TOTAL
L-DF 99W:	150916	3586	154502	18134	3236	1530	22900	7550	30450	184952:	
M:	378732	11449	390181	52250	17161	12425	81836	27227	109063	499244:	
P:	170355	6332	176687	11385	6644	409	18438	29936	48374	225061:	
8W:	105039	567	105606	4390	4202	148	8740	4910	13650	119256:	
M:	64962	723	65685	3399	4350	770	8519	11912	20431	86116:	
P:	18239	1752	19991	638	464	101	1203	13340	14543	34534:	
7W:	21536	95	21631	365	505	-	870	2004	2874	24505:	
M:	7869	216	8085	124	152	-	276	2028	2304	10389:	
P:	3257	207	3464	38	-	-	38	959	997	4461:	
S-AF 9 W:	45607	-	45607	21	42	87	150	321	471	46078:	
M:	86985	173	87158	709	692	-	1401	436	1837	88995:	
P:	58820	110	58930	121	441	-	562	949	1511	60441:	
8 W:	5207	-	5207	-	21	-	21	60	81	5288:	
M:	5965	-	5965	-	-	-	-	117	117	6082:	
P:	8253	13	8266	-	116	-	116	189	305	8571:	
7 W:	1132	-	1132	-	-	-	-	-	-	1132:	
M:	8598	-	8598	-	-	-	-	5	5	8603:	
P:	1746	-	1746	-	-	-	-	-	-	1746:	
C-H-CF9W:	17321	20	17341	1607	102	-	1709	661	2370	19711:	
M:	6489	-	6489	1366	336	-	1702	758	2460	8949:	
P:	1713	-	1713	907	-	-	907	216	1123	2836:	
8 W:	142	-	142	-	-	-	-	100	100	242:	
M:	175	-	175	-	43	-	43	61	104	279:	
P:	-	-	-	-	-	-	-	-	-	-	
7 W:	55	-	55	15	-	-	15	5	20	75:	
M:	54	-	54	-	-	-	-	20	20	74:	
P:	15	-	15	-	-	-	-	45	45	60:	

TABLE 1 A (Continued)

STRATA	NATIONAL	STATE	TOTAL	J. NEILS	NORTHERN	ANACONDA	TOTAL	SMALL	TOTAL	TOTAL
:	FOREST	:	PUBLIC	:	PACIFIC	:	INDUSTRIAL	PRIVATE	PRIVATE	:
CO	9W:	10	28	38:	289	-	289	55:	344	382:
	M:	440	-	440:	217	-	217	362:	579	1019:
	P:	531	-	531:	-	-	-	812:	812	1343:
	8W:	18	-	18:	-	-	-	198:	198	216:
	M:	56	166	222:	154	-	154	87:	241	463:
	P:	190	-	190:	18	-	18	40:	58	248:
	7W:	-	-	-	-	-	-	-	-	-
	M:	-	-	-	-	-	-	6:	6	6:
	P:	-	-	-	-	-	-	-	-	-
A	7W:	-	-	-	-	-	-	42:	42	42:
	M:	-	-	-	-	-	-	142:	142	142:
	P:	-	-	-	-	-	-	-	-	-
TOTAL										
STOCKED	1683587	42095	1725682:	193447	71596	24052	289095	145430:	434525	2160207:
NON										
STOCKED	19563	191	19754:	1182	679	19	1880	1917:	3797	23551:
TOTAL										
COMMERCIAL:	1703150	42286	1745436:	194629	72275	24071	290975	147347:	438322	2183758:
NCF	25218	546	25764:	418	1518	35	1971	1318:	3289	29053:
WATER	917	15	932:	30	-	150	180	348:	528	1460:
NF	28609	1585	30194:	3582	349	41	3972	54753:	58725	88919:
TOTAL	1757894	44432	1802326:	198659	74142	24297	297098	203766:	500864	2303190:

* Industrial private in this tabulation does not include 1,115 acres owned by Somers Lumber Co.

+1115

KOOTENAI WORKING CIRCLE

TABLE 1B

COMMERCIAL AREA (UNRESERVED) BY FOREST TYPE

SIZE CLASS AND OWNERSHIP AND BLOCK

NATIONAL FOREST

Forest Type	Sawtimber	Poles	Seedling and Saplings	Stocked Subtotal	Non Stocked	Total	% Owner ship Total
White Pine	25,008	3,775	1,326	30,109	63	30,172	1.8
Ponderosa Pine	158,727	11,571	2,201	172,499	6,000	178,499	10.5
Lodgepole Pine	26,804	196,550	87,198	310,552	100	310,652	18.2
Larch-D. Fir	700,003	188,240	32,662	920,905	7,000	927,905	54.5
Spr.-Alp. Fir	191,412	19,425	11,476	222,313	6,400	228,713	13.4
Hem.-C-G. Fir	25,523	317	124	25,964	-	25,964	1.5
Cottonwood	981	264	-	1,245	-	1,245	.1
Sub Total							
National Forest	1,128,458	420,142	134,987	1,683,587	19,563	1,703,150	100.0
% Size Class	66.3	24.7	7.9	98.9	1.1	100.0	

STATE OF MONTANA

White Pine	79	-	-	79	-	79	.2
Ponderosa Pine	13,902	673	268	14,843	91	14,934	35.2
Lodgepole Pine	243	1,271	222	1,736	-	1,736	4.1
Larch-D. Fir	21,367	3,042	518	24,927	100	25,027	59.2
Spr.-Alp. Fir	283	13	-	296	-	296	.7
Hem.-C-G. Fir	20	-	-	20	-	20	.1
Cottonwood	28	166	-	194	-	194	.5
Sub Total							
State of Montana	35,922	5,165	1,008	42,095	191	42,286	100.0
% Size Class	84.9	12.2	2.4	99.5	.5	100.0	

INDUSTRIAL PRIVATE

White Pine	807	-	15	822	-	822	.3
Ponderosa Pine	102,158	3,662	2,369	108,189	679	108,868	37.3
Lodgepole Pine	748	24,945	4,371	30,064	294	30,358	10.4
Larch D. Fir	124,111	18,536	1,184	143,831	907	144,738	49.5
Spr. Alp. Fir	2,113	137	-	2,250	-	2,250	.8
Hem.-C-G. Fir	4,318	43	15	4,376	-	4,376	1.5
Cottonwood	506	172	-	678	-	678	.2
Sub Total							
Industrial	234,761	47,495	7,954	290,210	1,860	292,090	100.0
% Size Class	80.4	16.3	2.7	99.4	.6	100.0	

OTHER PRIVATE

White Pine	225	-	-	225	-	225	.2
Ponderosa Pine	14,399	10,354	2,856	27,609	1,000	28,609	19.4
Lodgepole Pine	220	8,187	3,636	12,043	-	12,043	8.2
Larch D. Fir	64,713	30,162	4,991	99,866	917	100,783	68.3
Spr.-Alp. Fir	1,706	366	5	2,077	-	2,077	1.4
Hem.-C-G. Fir	1,635	161	70	1,866	-	1,866	1.3
Cottonwood	1,229	325	190	1,744	-	1,744	1.2
Sub Total							
Other Private	84,127	49,555	11,748	145,430	1,917	147,347	100.0
% Size Class	57.1	33.6	8.0	98.7	1.3	100.0	
Working Circle							
Total	1,483,268	522,357	155,697	2,161,322	23,551	2,184,873	
% W. C. Total	67.9	23.9	7.1	98.9	1.1	100.0	

COMMERCIAL AREA (UNRESERVED) BY SIZE CLASS

OWNERSHIP AND BLOCK

TABLE 1C

REXFORD RANGER DISTRICT -- 1

Forest Type	Sawtimber	Poles	Seedling and Saplings	Stocked Subtotal	Non Stocked	Total	Block Type %
<u>AREA IN ACRES</u>							
White Pine	395	-	-	395	-	-	2
Ponderosa Pine	23749	209	-	23958	-	-	10.8
Lodgepole Pine	1427	34824	10465	46716	-	-	21.4
Larch-D. Fir	89054	16529	1335	106918	-	-	49.0
Spr.-Alp. Fir	38157	1945	104	40206	-	-	18.4
Hem-C-G. Fir	58	-	-	58	-	-	.1
Cottonwood	61	-	-	61	-	-	.1
Total	152901	53507	11904	218312	3152	221464	100.0
Block %	69.0	24.0	5.5	98.5	1.5	100.0	
% Forest	13.6	12.6	8.9	13.0	16.1	12.9	

SYLVANITE RANGER DISTRICT -- BLOCK 2

White Pine	3372	1313	-	4685	-	-	2.9
Ponderosa Pine	4215	159	25	4399	-	-	2.7
Lodgepole Pine	718	9357	9363	19438	-	-	11.6
Larch-D. Fir	47065	33235	9010	89310	-	-	53.6
Spr.-Alp. Fir	31924	4281	8017	44222	-	-	26.6
Hem. C-G. Fir	4245	80	15	4340	-	-	2.6
Cottonwood	-	-	-	-	-	-	-
Total	91539	48425	26430	166394	2236	168630	100.0
Block %	54.1	28.9	15.7	98.7	1.3	100.0	
% Forest	8.1	11.5	19.6	9.9	11.4	9.9	

FORTUNE RANGER DISTRICT -- BLOCK 3

White Pine	27	232	-	259	-	-	.1
Ponderosa Pine	970	497	107	1574	-	-	.8
Lodgepole Pine	11381	17767	21635	50783	-	-	20.4
Larch-D. Fir	121261	21657	10068	152986	-	-	62.1
Spr.-Alp. Fir	33718	5116	1043	39877	-	-	16.4
Hem. C-G. Fir	-	32	-	32	-	-	.1
Cottonwood	201	13	-	214	-	-	.1
Total	167558	45314	32853	245725	2526	248251	100.0
Block %	67.6	18.2	13.2	99.0	1.0	100.0	
% Forest	14.8	10.8	24.3	14.6	12.8	14.6	

TROY RANGER DISTRICT -- BLOCK 4

White Pine	8209	1909	576	10694	-	-	5.5
Ponderosa Pine	12354	45	25	12424	-	-	6.4
Lodgepole Pine	1693	8345	1882	11920	-	-	6.1
Larch D. Fir	89920	14365	2422	106707	-	-	55.1
Spr.-Alp. Fir	30833	1928	464	33225	-	-	16.9
Hem.-C-G. Fir	19033	62	109	19204	-	-	9.9
Cottonwood	215	-	-	215	-	-	.1
Total	162257	26654	5478	194389	947	195336	100.0
Block %	83.1	13.6	2.8	99.5	.5	100.0	
% Forest	14.4	6.3	4.1	11.5	4.8	11.5	

TABLE 1 C (Continued)

LIBBY RANGER DISTRICT - BLOCK 5

Forest Type	Sawtimber:	Poles	Seedling:	Stocked	Non	Total	Block
:	:	:	and	Subtotal:	Stocked	:	Type %:
:	:	:	Saplings:	:	:	:	:
<u>AREA IN ACRES</u>							
White Pine	9072	321	750	10143	-	-	3.7
Ponderosa Pine	34644	7413	1326	43383	-	-	16.1
Lodgepole Pine	125	34972	12742	47839	-	-	18.1
Larch-D. Fir	110931	28908	5445	145284	-	-	53.5
Spr.-Alp. Fir	18092	2559	161	20812	-	-	7.6
Hem.-C-G. Fir	1211	50	-	1261	-	-	.5
Cottonwood	504	251	-	755	-	-	.3
Total	174579	74474	20424	269477	3433	272910	:
Block %	64.0	27.3	7.5	98.8	1.2	100.0	:
Forest %	15.4	17.7	15.1	16.0	17.6	15.9	:

FISHER RIVER RANGER DISTRICT - BLOCK 6

White Pine	1221	-	-	1221	-	-	.6
Ponderosa Pine	45156	2334	394	47884	-	-	21.9
Lodgepole Pine	881	37109	5667	43657	-	-	20.0
Larch-D. Fir	90613	26997	1514	119124	-	-	54.7
Spr.-Alp. Fir	5016	456	92	5564	-	-	2.6
Hem.-C-G. Fir	545	-	-	545	-	-	.2
Cottonwood	-	-	-	-	-	-	-
Total	143432	66896	7667	217995	4565	222560	100.0
Block %	64.1	30.2	3.4	97.7	2.3	100.0	:
Forest %	12.7	16.2	5.7	12.9	23.4	13.2	:

WARLAND RANGER DISTRICT - BLOCK 7

White Pine	192	-	-	192	-	-	:
Ponderosa Pine	37552	914	324	38790	-	-	:
Lodgepole Pine	-	25798	5892	31690	-	-	:
Larch-D. Fir	57990	21858	1093	80941	-	-	:
Spr.-Alp. Fir	3903	1545	162	5610	-	-	:
Hem.-C-G. Fir	366	93	-	459	-	-	:
Cottonwood	-	-	-	-	-	-	:
Total	100003	50208	7471	157682	969	158651	100.0
Block %	63.1	31.6	4.7	99.4	.6	100.0	:
Forest %	8.9	11.9	5.5	9.4	5.0	9.3	:

YAAK RANGER DISTRICT - BLOCK 8

White Pine	2520	-	-	2520	-	-	:
Ponderosa Pine	87	-	-	87	-	-	:
Lodgepole Pine	10579	28378	19552	58509	-	-	24.8
Larch-D. Fir	93169	24691	1775	119635	-	-	57.0
Spr.-Alp. Fir	29769	1595	1433	32797	-	-	16.6
Hem.-C-G. Fir	65	-	-	65	-	-	.1
Cottonwood	-	-	-	-	-	-	:
Total	136189	54664	22760	213613	1735	215348	100.0
Block %	63.3	25.3	10.6	99.2	.8	100.0	:
Forest %	12.1	13.0	16.8	12.7	8.9	12.7	:

GRAND TOTAL	1128458	420142	134987	1683587	19563	1703150	:
%	66.3	24.7	7.9	98.9	1.1	100.0	:

TABLE 2

NET AVERAGE ACRE VOLUMES OF SAWTIMBER
BY TYPE STRATA (TREES 11" DBH AND OVER)

STRATA	Board Feet (Scribner)										
	W PINE	P PINE	LPP PINE	LARCH	D FIR	G FIR A FIR	HEM	CED	SPR	COT	TOTAL
W9W	12758	279	208	2079	2225	760	1729	1031	2855	810	24734
W9M	5614	-	354	3432	832	1660	1339	1462	1800	-	16493
W9P	2807	-	354	1714	414	806	649	726	597	-	8067
W8W	1487	-	119	469	71	196	105	24	69	-	2540
W8M	990	-	-	310	48	167	61	20	28	-	1624
W8P	224	-	-	190	39	9	-	8	78	-	548
P9W	219	4884	268	1071	3428	90	-	54	-	-	10014
P9M	193	4238	234	925	2975	77	-	47	-	-	8689
P9P	-	1435	-	210	1561	-	-	-	-	-	3206
P8W	-	1200	-	-	300	-	No Data Estimated				1500
P8M	-	1000	-	-	200	-	"	"	"	-	1200
P8P	-	400	-	-	100	-	"	"	"	-	500
LP9W	-	-	5573	1076	1169	519	-	-	1939	-	10276
LP9M	-	-	5573	1076	1169	519	-	-	1939	-	10276
LP9P	-	-	3892	-	531	-	-	-	-	-	4423
LP8W	23	-	698	1358	436	98	-	-	143	-	2756
LP8M	-	-	1748	555	-	179	-	-	105	-	2587
LP8P	-	-	-	-	-	-	-	-	-	-	-
LA-DF9W	171	-	1025	6641	3420	478	-	-	870	-	12605
LA-DF9M	482	427	467	2995	2526	168	30	178	486	-	7759
LA-DF9P	61	1084	410	1892	1384	69	221	43	-	-	5164
LA-DF8W	-	195	888	212	58	39	-	-	65	-	1457
LA-DF8M	-	-	1413	518	110	-	-	29	-	-	2070
LA-DF8P	-	-	883	316	88	-	-	-	-	-	1287
S-AF9W	408	-	2409	884	-	1951	94	54	12051	-	17851
S-AF9M	65	-	2409	1472	323	2527	124	340	5021	-	12281
S-AF9P	-	-	-	2808	-	2556	-	209	3513	-	9086
S-AF8W	-	-	-	-	-	-	-	-	2857	-	2857
S-AF8M	-	-	-	-	-	-	-	-	1963	-	1963
S-AF8P	-	-	-	-	-	-	-	-	2106	-	2106
C-H-GF9W	-	-	-	260	-	769	4432	984	-	194	6639
C-H-GF9M	618	-	666	2461	923	343	375	1919	699	-	8004
C-H-GF9P	1667	-	-	-	806	1460	1939	1539	-	643	8054
C-H-GF8W	638	-	208	776	392	1007	900	179	-	-	4100
C-H-GF8M	491	-	-	175	591	875	442	272	22	-	2868
C-H-GF8P	351	-	-	63	-	341	1363	-	106	-	2224
COT9W	No Data Estimated									15000	15000
COT9M	" " "									10000	10000
COT9P	" " "									5000	5000

From Forest Survey and 1957 Timber Management Inventory Samples

NET AVERAGE ACRE VOLUMES IN CUBIC FEET OF SAWTIMBER
SIZE TREES (OVER 11" DBH) BY TYPE STRATA *

TABLE 2 A

STRATA	W PINE	P PINE	LP PINE	LARCH	D FIR	G FIR A FIR	HEM	CED	SPR	COT	TOTAL
W9W	2705	54	46	438	490	175	406	268	586	171	5339
W9M	1190	-	79	723	183	382	314	383	370	-	3624
W9P	595	-	79	361	91	185	152	190	123	-	1776
W8W	319	-	26	102	15	46	23	5	12	-	548
W8M	212	-	-	67	10	40	13	4	6	-	352
W8P	48	-	-	41	8	2	-	2	16	-	117
P9W	46	941	60	226	755	21	-	15	-	-	2064
P9M	41	816	52	195	655	18	-	13	-	-	1790
P9P	-	276	-	44	344	-	-	-	-	-	664
P8W	-	240	-	-	60	No Data Estimated					300
P8M	-	200	-	-	40	"	"	"	-	-	240
P8P	-	80	-	-	20	"	"	"	-	-	100
LP9W	-	-	1237	227	257	119	-	-	398	-	2238
LP9M	-	-	1237	227	257	119	-	-	398	-	2238
LP9P	-	-	864	-	-	122	-	-	-	-	986
LP8W	5	-	155	295	97	23	-	-	30	-	605
LP8M	-	-	388	120	-	41	-	-	23	-	572
LP8P	-	-	-	-	-	-	-	-	-	-	-
L-DF9W	36	-	228	1399	753	110	-	-	179	-	2705
L-DF9M	102	82	104	631	557	39	7	47	100	-	1669
L-DF9P	13	209	91	393	305	16	52	12	-	-	1096
L-DF8W	-	42	197	46	12	8	-	-	13	-	318
L-DF8M	-	-	313	112	25	-	-	8	-	-	458
L-DF8P	-	-	196	60	20	-	-	-	-	-	285
S9W	86	-	554	186	-	448	22	15	2474	-	3785
S9M	14	-	456	310	71	581	29	89	1031	-	2581
S9P	-	-	-	591	-	695	-	55	721	-	2062
S8W	-	-	-	-	-	-	-	-	607	-	607
S8M	-	-	-	-	-	-	-	-	418	-	418
S8P	-	-	-	-	-	-	-	-	448	-	448
C-H-GF9W	-	-	-	55	-	175	1040	258	-	42	1570
C-H-GF9M	131	-	148	518	203	78	88	502	143	-	1811
C-H-GF9P	353	-	-	-	178	332	455	403	-	139	1860
C-H-GF8W	137	-	46	168	87	239	200	42	-	-	919
C-H-GF8M	105	-	-	38	131	207	98	65	5	-	649
C-H-GF8P	76	-	-	13	-	81	303	-	23	-	496
COT9W	-	-	-	-	-	-	No Data Estimated			339	339
COT9M	-	-	-	-	-	-	"	"	"	227	227
COT9P	-	-	-	-	-	-	"	"	"	113	113

* From Forest Survey and 1957 Timber Management Inventory Samples

TABLE 2 B

NET AVERAGE ACRE VOLUMES OF POLE SIZE TREES
(UNDER 11" DBH) BY TYPE STRATA*

STRATA	W PINE	P PINE	LP PINE	LARCH	D FIR	G FIR A FIR	HEM	CED	SPR	COT	TOTAL
CUBIC FEET											
W9W	47	-	6	23	4	188	32	38	13	-	351
W9M	218	-	9	48	70	198	155	227	98	-	1023
W9P	71	-	9	16	23	63	50	73	33	-	338
W8W	517	-	150	242	96	78	6	30	38	-	1157
W8M	179	-	32	89	120	100	8	18	20	-	566
W8P	87	-	10	5	3	5	19	10	92	-	231
P9W	12	10	225	48	171	29	-	-	-	-	495
P9M	10	9	199	42	149	24	-	-	-	-	433
P9P	-	38	-	-	38	-	-	-	-	-	76
P8W	-	400	(Estimated)	-	100	-	-	-	-	-	500
P8M	-	200	(Estimated)	-	50	-	-	-	-	-	250
P8P	-	100	(Estimated)	-	50	-	-	-	-	-	150
LP9W	-	-	440	51	-	253	-	-	277	-	1021
LP9M	-	-	440	51	-	253	-	-	277	-	1021
LP9P	-	-	690	-	-	1420	-	-	70	-	2180
LP8W	-	12	1685	122	59	75	-	-	41	6	2000
LP8M	-	-	1111	-	18	163	-	-	-	-	1292
LP8P	-	-	49	-	-	-	-	-	-	-	49
LA-DF9W	-	-	894	-	100	122	-	-	-	-	1116
LA-DF9M	32	4	519	112	169	120	26	14	62	-	1058
LA-DF9P	-	46	382	102	100	26	-	14	-	-	670
LA-DF8W	28	34	1339	414	100	55	-	42	32	-	2044
LA-DF8M	-	-	630	240	80	3	-	-	-	-	953
LA-DF8P	-	-	200	162	60	2	-	-	-	-	424
SP-AF9W	-	-	-	-	-	162	8	-	58	-	228
SP-AF9M	50	-	256	21	-	112	-	92	274	-	805
SP-AF9P	-	-	50	43	-	214	-	25	209	-	541
SP-AF8W	-	-	-	-	-	285	-	-	560	-	845
SP-AF8M	-	-	-	-	-	190	-	-	373	-	563
SP-AF8P	-	-	-	-	-	496	-	-	808	-	1304
C-H-GF9W	59	-	-	308	13	-	224	11	81	-	696
C-H-GF9M	96	-	88	222	42	12	-	100	51	-	611
C-H-GF9P	-	-	-	-	-	19	16	81	-	-	116
C-H-GF8W	45	-	82	73	167	530	333	89	-	-	1319
C-H-GF8M	4	-	81	-	44	217	77	36	14	-	473
C-H-GF8P	-	-	-	-	493	74	55	-	-	-	622
COT 9 & 8	-	-	-	-	-	-	(Estimated)			220	220

* From forest survey and 1957 timber management planning inventory samples

KOOTENAI WORKING CIRCLE

5

TABLE 3 (Continued)

STRATA:	AREA	W. PINE	P. PINE	LP PINE	LARCH	D. FIR	G. FIR	HEM	CEDAR	SPRUCE	COTTON	TOTAL
:	IN	:	:	:	:	:	A. FIR	:	:	:	WOOD	:
:	ACRES	:	:	:	:	:	:	:	:	:	:	:
ADF9W:	150916	25807	-	-	154689	1002232	516133	72138	-	131297	-	1902296
9M:	378732	182549	161719	-	176868	1134302	956677	63627	11362	67414	184064	2938582
9P:	170355	10392	184665	-	69846	322312	235771	11754	37648	7325	-	879713
8M:	105039	-	20483	-	93275	22268	6092	4097	-	6827	-	153042
8M:	64962	-	-	-	91791	33650	7146	-	1884	-	-	134471
8P:	18239	-	-	-	16105	5764	1605	-	-	-	-	23474
7M:	21536	-	-	-	-	-	-	-	-	-	-	-
7M:	7869	-	-	-	-	-	-	-	-	-	-	-
7P:	3257	-	-	-	-	-	-	-	-	-	-	-
SAF9W:	45607	18608	-	-	109867	40317	-	88979	4287	2463	549610	814131
9M:	86985	5654	-	-	209547	128042	28096	219811	10786	29575	436752	1068263
9P:	58820	-	-	-	-	165167	-	150344	-	12293	206635	534439
SAF8W:	5207	-	-	-	-	-	-	-	-	-	14876	14876
8M:	5965	-	-	-	-	-	-	-	-	-	11709	11709
8P:	8253	-	-	-	-	-	-	-	-	-	17381	17381
SAF7W:	1132	-	-	-	-	-	-	-	-	-	-	-
7M:	8598	-	-	-	-	-	-	-	-	-	-	-
7P:	1746	-	-	-	-	-	-	-	-	-	-	-
SHCF9W:	17321	-	-	-	-	4503	-	13320	76767	17044	3360	114994
9M:	6489	4010	-	-	4322	15969	5989	2226	2433	12453	4536	51938
9P:	1713	2856	-	-	-	-	1381	2501	3322	2636	1101	13797
8W:	142	91	-	-	30	110	56	142	128	25	-	582
8M:	175	86	-	-	-	31	103	153	77	48	4	502
8P:	-	-	-	-	-	-	-	-	-	-	-	-
7W:	55	-	-	-	-	-	-	-	-	-	-	-
7M:	54	-	-	-	-	-	-	-	-	-	-	-
7P:	15	-	-	-	-	-	-	-	-	-	-	-
CO9W:	10	-	-	-	-	-	-	-	-	-	-	150
9M:	440	-	-	-	-	-	-	-	-	-	150	4400
9P:	531	-	-	-	-	-	-	-	-	-	400	2655
8W:	18	-	-	-	-	-	-	-	-	-	-	-
8M:	56	-	-	-	-	-	-	-	-	-	-	-
8P:	190	-	-	-	-	-	-	-	-	-	-	-
TOTAL												
STOCKED:	1683587	498642	884416	1281648	3269129	2263946	703793	184538	188626	1682937	21213	10978888

TABLE 3 A

VOLUME OF SAWTIMBER REXFORD

STRATA:	ACREAGE:	W. PINE	P. PINE	LP AND WB PINE	LARCH	D. FIR	G. FIR	HEMLOCK	CEDAR	SPRUCE	WOOD	COTTON:	TOTAL
VOLUME M FT BM (SCRIBNER)													
W9W	-	-	-	-	-	-	-	-	-	-	-	-	-
9M	395	2218	-	140	1356	329	655	529	577	710	-	-	6514
9P	-	-	-	-	-	-	-	-	-	-	-	-	-
8W	-	-	-	-	-	-	-	-	-	-	-	-	-
8M	-	-	-	-	-	-	-	-	-	-	-	-	-
8P	-	-	-	-	-	-	-	-	-	-	-	-	-
7W	-	-	-	-	-	-	-	-	-	-	-	-	-
7M	-	-	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-	-	-
P9W	56	12	274	15	60	193	5	-	3	-	-	-	562
9M	13634	2631	57782	3191	12611	40562	1050	-	642	-	-	-	118469
9P	10059	-	14434	-	2113	15702	-	-	-	-	-	-	32249
8W	60	-	72	-	-	17	-	-	-	-	-	-	89
8M	94	-	94	-	-	19	-	-	-	-	-	-	113
8P	55	-	22	-	-	6	-	-	-	-	-	-	28
7W	-	-	-	-	-	-	-	-	-	-	-	-	-
7M	-	-	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-	-	-
LP9W	-	-	-	-	-	-	-	-	-	-	-	-	-
9M	1298	-	-	7233	1398	1518	674	-	-	2516	-	-	13339
9P	129	-	-	503	-	-	69	-	-	-	-	-	572
8W	29227	672	-	29400	39690	12744	2854	-	-	4180	-	-	80550
8M	3660	-	-	6398	2032	-	655	-	-	384	-	-	9469
8P	1937	-	-	-	-	-	-	-	-	-	-	-	-
7W	7941	-	-	-	-	-	-	-	-	-	-	-	-
7M	2345	-	-	-	-	-	-	-	-	-	-	-	-
7P	179	-	-	-	-	-	-	-	-	-	-	-	-
LA-DF9W	12765	2183	-	13084	84772	43656	6102	-	-	11107	-	-	160904
9M	60938	29372	26020	28458	182510	153929	10238	1828	10846	29617	-	-	472818
9P	15351	936	16640	6295	29044	21245	1059	3392	660	-	-	-	79271
8W	9882	-	1928	8776	2095	574	386	-	-	642	-	-	14401
8M	5510	-	-	7787	2853	606	-	-	153	-	-	-	11405
8P	1137	-	-	1005	359	100	-	-	-	-	-	-	1464
7W	850	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 3 A (Continued)

STRATA	ACREAGE	W. PINE	P. PINE	LP AND WB PINE	LARCH	D. FIR	G. FIR A. FIR	HEMLOCK	CEDAR	SPRUCE	COTTON WOOD	TOTAL
VOLUME M FT BM (SCRIBNER)												
7M	364	-	-	-	-	-	-	-	-	-	-	-
7P	121	-	-	-	-	-	-	-	-	-	-	-
SAF9W	11927	4866	-	28733	10544	-	23269	1121	645	143733	-	212911
9M	17825	1159	-	42941	26239	5756	45043	2210	6062	89500	-	218910
9P	8405	-	-	-	23602	-	21483	-	1756	29526	-	76367
8W	1046	-	-	-	-	-	-	-	-	2988	-	2988
8M	624	-	-	-	-	-	-	-	-	1225	-	1225
8P	275	-	-	-	-	-	-	-	-	579	-	579
7W	-	-	-	-	-	-	-	-	-	-	-	-
7M	19	-	-	-	-	-	-	-	-	-	-	-
7P	85	-	-	-	-	-	-	-	-	-	-	-
CHCF9W	-	-	-	-	-	-	-	-	-	-	-	-
9M	58	36	-	39	142	54	20	22	112	41	-	466
9P	-	-	-	-	-	-	-	-	-	-	-	-
8W	-	-	-	-	-	-	-	-	-	-	-	-
8M	-	-	-	-	-	-	-	-	-	-	-	-
8P	-	-	-	-	-	-	-	-	-	-	-	-
7W	-	-	-	-	-	-	-	-	-	-	-	-
7M	-	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-	-
CO9W	-	-	-	-	-	-	-	-	-	-	-	-
9M	61	-	-	-	-	-	-	-	-	610	-	610
9P	-	-	-	-	-	-	-	-	-	-	-	-
8W	-	-	-	-	-	-	-	-	-	-	-	-
8M	-	-	-	-	-	-	-	-	-	-	-	-
8P	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL												
STOCKED	218312	44085	117266	174998	421420	297010	113572	9102	21462	316748	610	1516273

TABLE 3 B

NET VOLUME OF SAWTIMBER SYLVANITE RANGER DISTRICT

STRATA	ACREAGE	W. PINE	P. PINE	LP AND	LARCH	D. FIR	G. FIR	HEMLOCK	CEDAR	SPRUCE	COTTON	TOTAL
				WB PINE:			A. FIR				WOOD	
NET VOLUME M FT BM (SCRIBNER)												
W9W	1810	23093	505	376	3762	4028	1375	3129	1866	5167	1467	44768
9M	1467	8235	-	519	5035	1221	2435	1964	2145	2642	-	24196
9P	95	268	-	34	163	38	77	61	69	56	-	766
8W	730	1086	-	87	342	52	143	77	16	51	-	1854
8M	583	577	-	-	181	28	97	35	11	16	-	945
8P	-	-	-	-	-	-	-	-	-	-	-	-
7W	-	-	-	-	-	-	-	-	-	-	-	-
7M	-	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-	-
P9W	250	55	1221	67	268	857	23	-	14	-	-	2505
9M	2395	462	10151	560	2215	7125	184	-	113	-	-	20810
9P	1570	-	2253	-	330	2450	-	-	-	-	-	5033
8W	-	-	-	-	-	-	-	-	-	-	-	-
8M	94	-	94	-	-	19	-	-	-	-	-	113
8P	65	-	26	-	-	7	-	-	-	-	-	33
7W	-	-	-	-	-	-	-	-	-	-	-	-
7M	-	-	-	-	-	-	-	-	-	-	-	-
7P	25	-	-	-	-	-	-	-	-	-	-	-
LP9W	-	-	-	-	-	-	-	-	-	-	-	-
9M	345	-	-	1922	371	403	179	-	-	669	-	3544
9P	373	-	-	1452	-	-	198	-	-	-	-	1650
8W	4276	98	-	2985	5807	1864	419	-	-	611	-	11784
8M	3534	-	-	6177	1962	-	633	-	-	371	-	9143
8P	1547	-	-	-	-	-	-	-	-	-	-	-
7W	6052	-	-	-	-	-	-	-	-	-	-	-
7M	1056	-	-	-	-	-	-	-	-	-	-	-
7P	2255	-	-	-	-	-	-	-	-	-	-	-
LDF9W	12126	2074	-	12429	80523	41471	5796	-	-	10549	-	152847
9M	24592	11853	10501	11484	73653	62119	4132	738	4377	11953	-	190810
9P	10347	632	11216	4243	19576	14320	815	2287	444	-	-	53433
8W	21988	-	4288	19526	4661	1275	858	-	-	1429	-	32037

TABLE 3 B (Continued)

STRATA	ACREAGE	W. PINE	P. PINE	LP AND WB PINE	LARCH	D. FIR	G. FIR	HEMLOCK	CEDAR	SPRUCE	COTTON WOOD	TOTAL
NET VOLUME M FT BM (SCRIBNER)												
8M	8839	-	-	12490	4579	972	-	-	256	-	-	18297
8P	2408	-	-	2126	761	212	-	-	-	-	-	3099
7W	5018	-	-	-	-	-	-	-	-	-	-	-
7M	3736	-	-	-	-	-	-	-	-	-	-	-
7P	256	-	-	-	-	-	-	-	-	-	-	-
SAF9W	8521	3477	-	20526	7533	-	16624	801	460	102687	-	152108
9M	15702	1021	-	37827	23114	5072	39679	1947	5339	78840	-	192839
9P	7701	-	-	-	21625	-	19683	-	1609	27054	-	69971
8W	1343	-	-	-	-	-	-	-	-	3837	-	3837
8M	1655	-	-	-	-	-	-	-	-	3249	-	3249
8P	1283	-	-	-	-	-	-	-	-	2702	-	2702
7W	370	-	-	-	-	-	-	-	-	-	-	-
7M	6358	-	-	-	-	-	-	-	-	-	-	-
7P	1289	-	-	-	-	-	-	-	-	-	-	-
CHCF9W	3162	-	-	-	-	-	-	-	-	-	-	-
9M	702	434	-	468	822	647	2432	14014	3110	-	613	20991
9P	381	636	-	-	1727	308	241	263	1347	491	-	5618
8W	80	51	-	17	-	32	556	739	586	-	244	3069
8M	-	-	-	-	62	-	80	72	14	-	-	328
8P	-	-	-	-	-	-	-	-	-	-	-	-
8M	-	-	-	-	-	-	-	-	-	-	-	-
8P	-	-	-	-	-	-	-	-	-	-	-	-
7W	-	-	-	-	-	-	-	-	-	-	-	-
7M	-	-	-	-	-	-	-	-	-	-	-	-
7P	15	-	-	-	-	-	-	-	-	-	-	-
C09W	-	-	-	-	-	-	-	-	-	-	-	-
9M	-	-	-	-	-	-	-	-	-	-	-	-
9P	-	-	-	-	-	-	-	-	-	-	-	-
8W	-	-	-	-	-	-	-	-	-	-	-	-
8M	-	-	-	-	-	-	-	-	-	-	-	-
8P	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	166394	54052	40255	135315	259077	144520	96559	26127	21776	252374	2324	1032379

VOLUME OF SAWTIMBER FORTNE RANGER DISTRICT

TABLE 3 C

STRATA	ACREAGE	W. PINE	P. PINE	W.B PINE	LP AND	LARCH	D. FIR	A. FIR	G. FIR	HENLOCK	CEDAR	SPRUCE	COYTON	TOTAL
VOLUME M FT BM (SCRIBNER)														
W9W	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9M	27	151	-	-	10	93	22	45	36	-	39	49	-	445
9P	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8W	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8M	232	230	-	-	-	72	11	39	14	-	5	6	-	377
8P	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7W	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7M	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P9W	43	9	211	-	12	46	147	4	-	-	-	-	-	429
9M	724	140	3068	-	169	670	2154	56	-	-	34	-	-	6291
9P	203	-	291	-	-	43	317	-	-	-	-	-	-	651
8W	40	-	48	-	-	-	12	-	-	-	-	-	-	60
8M	201	-	201	-	-	-	40	-	-	-	-	-	-	241
8P	256	-	102	-	-	-	25	-	-	-	-	-	-	127
7W	14	-	-	-	-	-	-	-	-	-	-	-	-	-
7M	11	-	-	-	-	-	-	-	-	-	-	-	-	-
7P	82	-	-	-	-	-	-	-	-	-	-	-	-	-
LP9W	4146	-	-	-	23106	4460	4847	2152	-	-	-	8039	-	42604
9M	5315	-	-	-	29621	5719	6213	2758	-	-	-	10306	-	54617
9P	1920	-	-	-	7471	-	-	1020	-	-	-	-	-	8491
8W	9148	-	-	-	6385	12422	3988	897	-	-	-	1308	-	25210
8M	4810	-	-	-	8407	2670	-	861	-	-	-	505	-	12443
8P	3809	-	-	-	-	-	-	-	-	-	-	-	-	-
7W	12027	-	-	-	-	-	-	-	-	-	-	-	-	-
7M	5506	-	-	-	-	-	-	-	-	-	-	-	-	-
7P	4102	-	-	-	-	-	-	-	-	-	-	-	-	-
LA-DF9W	23603	4036	-	-	24193	156747	80722	11282	-	-	-	20535	-	297515
9M	54887	26456	23437	-	25632	164386	138645	9220	1646	-	9770	26675	-	425867
9P	42771	2609	46364	-	17536	80923	53195	2951	9452	-	1839	-	-	220869
8W	7180	-	1400	-	6376	1521	416	280	-	-	-	467	-	10460
8M	7571	-	-	-	10697	3922	833	-	-	-	220	-	-	15672

TABLE 3 C (Continued)

VOLUME M FT BM (SCRIBNER)

STRATA:	ACREAGE:	W. PINE	P. PINE	LP AND WB PINE:	LARCH	D. FIR	G. FIR:	HEMLOCK	CEDAR	SPRUCE	COTTON:	TOTAL
:	:	:	:	:	:	:	A. FIR:	:	:	:	WOOD	:
8P :	6906 :	-	-	6098 :	2182 :	608 :	-	-	-	-	-	8888
7W :	8331 :	-	-	-	-	-	-	-	-	-	-	-
7M :	1021 :	-	-	-	-	-	-	-	-	-	-	-
7P :	716 :	-	-	-	-	-	-	-	-	-	-	-
SAF9W :	7017 :	2863	-	16903 :	6203 :	-	13690 :	660	379 :	84562	-	125260
9M :	10464 :	680	-	25207 :	15403 :	3380 :	26443 :	1298	3557 :	52540	-	128508
9P :	16237 :	-	-	-	45593 :	-	41502 :	-	3394 :	57041	-	147530
8W :	115 :	-	-	-	-	-	-	-	-	329	-	329
8M :	170 :	-	-	-	-	-	-	-	-	334	-	334
8P :	4831 :	-	-	-	-	-	-	-	-	10174	-	10174
7W :	311 :	-	-	-	-	-	-	-	-	-	-	-
7M :	376 :	-	-	-	-	-	-	-	-	-	-	-
7P :	356 :	-	-	-	-	-	-	-	-	-	-	-
CHGF9W :	-	-	-	-	-	-	-	-	-	-	-	-
9M :	-	-	-	-	-	-	-	-	-	-	-	-
9P :	-	-	-	-	-	-	-	-	-	-	-	-
8W :	-	-	-	-	-	-	-	-	-	-	-	-
8M :	32 :	16	-	-	6 :	19 :	27 :	14	9 :	1	-	92
8P :	-	-	-	-	-	-	-	-	-	-	-	-
7W :	-	-	-	-	-	-	-	-	-	-	-	-
7M :	-	-	-	-	-	-	-	-	-	-	-	-
7P :	-	-	-	-	-	-	-	-	-	-	-	-
C09W :	-	-	-	-	-	-	-	-	-	-	-	-
9M :	37 :	-	-	-	-	-	-	-	-	-	-	370
9P :	164 :	-	-	-	-	-	-	-	-	-	-	819
8W :	-	-	-	-	-	-	-	-	-	-	-	-
8M :	13 :	-	-	-	-	-	-	-	-	-	-	-
8P :	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL												
STOCKED	245725 :	37400	75122	207823 :	503081 :	301594 :	113227 :	13120	19246 :	272871	1189 :	1544673

TABLE 3D

VOLUME OF SAWTIMBER TROY BLOCK

STRATA	ACREAGE	W. PINE	P. PINE	LP AND WB PINE	LARCH	D. FIR	G. FIR:HEMLOCK	CEDAR	SPRUCE	WOOD	COTTON:	TOTAL
							A. FIR					
VOLUME M FT BM (SCRIBNER)												
W9W	5362	68408	1496	1116	11148	11930	4075	5528	15309	4343		132625
9M	2827	15871	-	1000	9702	2352	4593	4133	5089	-		46625
9P	20	56	-	7	34	8	16	15	11	*		160
8W	1800	2676	-	214	844	128	353	44	124	-		4572
8M	109	108	-	-	34	5	18	2	3	-		177
8P	-	-	-	-	-	-	-	-	-	-		-
7W	541	-	-	-	-	-	-	-	-	-		-
7M	35	-	-	-	-	-	-	-	-	-		-
7P	-	-	-	-	-	-	-	-	-	-		-
P9W	1035	227	5055	277	1108	3548	93	57	-	-		10365
9M	6966	1344	29523	1631	6444	20724	536	327	-	-		60529
9P	4353	-	6247	-	914	6795	-	-	-	-		13956
8W	-	-	-	-	-	-	-	-	-	-		-
8M	-	-	-	-	-	-	-	-	-	-		-
8P	45	-	18	-	-	5	-	-	-	-		23
7W	25	-	-	-	-	-	-	-	-	-		-
7M	-	-	-	-	-	-	-	-	-	-		-
7P	-	-	-	-	-	-	-	-	-	-		-
LP9W	75	-	-	418	80	88	39	-	146	-		771
9M	1186	-	-	6610	1275	1386	616	-	2300	-		12187
9P	432	-	-	1682	-	-	229	-	-	-		1911
8W	6738	155	-	4703	9150	2938	660	-	964	-		18570
8M	1339	-	-	2341	743	-	240	-	140	-		3464
8P	268	-	-	-	-	-	-	-	-	-		-
7W	961	-	-	-	-	-	-	-	-	-		-
7M	515	-	-	-	-	-	-	-	-	-		-
7P	406	-	-	-	-	-	-	-	-	-		-
LDF9W	38034	6504	-	38985	252584	130076	18180	-	33090	-		479419
9M	35569	17144	15188	16611	106528	89848	5976	6331	17287	-		275980

TABLE 3 D (Continued)

VOLUME M FT BM (SCRIBNER)

STRATA	ACREAGE	W. PINE	P. PINE	LP AND WB PINE	LARCH	D. FIR	G. FIR A. FIR	HEMLOCK	CEDAR	SPRUCE	COTTON WOOD	TOTAL
9P	16317	995	17687	6690	30872	22583	1126	3606	702	-	-	84261
8W	11103	-	2165	9859	2353	644	433	-	-	722	-	16176
8M	2228	-	-	3148	1154	245	-	-	65	-	-	4612
8P	1034	-	-	913	327	91	-	-	-	-	-	1331
7W	1399	-	-	-	-	-	-	-	-	-	-	-
7M	433	-	-	-	-	-	-	-	-	-	-	-
7P	590	-	-	-	-	-	-	-	-	-	-	-
SAF9W	3202	1306	-	7714	2831	-	6247	301	173	38587	-	57159
9M	16018	1041	-	38587	23578	5174	40478	1986	5446	80426	-	196716
9P	11613	-	-	-	32610	-	29683	-	2427	40797	-	105517
8W	911	-	-	-	-	-	-	-	-	2603	-	2603
8M	802	-	-	-	-	-	-	-	-	1574	-	1574
8P	215	-	-	-	-	-	-	-	-	453	-	453
7W	285	-	-	-	-	-	-	-	-	-	-	-
7M	169	-	-	-	-	-	-	-	-	-	-	-
7P	10	-	-	-	-	-	-	-	-	-	-	-
CHGF9W	13754	-	-	-	3576	-	10577	60958	13534	-	2568	91313
9M	4230	2614	-	2817	10410	3904	1451	1586	8117	2958	-	33857
9P	1049	1749	-	-	-	845	1532	2034	1614	-	675	8449
8W	62	40	-	13	48	24	62	56	11	-	-	254
8M	-	-	-	-	-	-	-	-	-	-	-	-
8P	-	-	-	-	-	-	-	-	-	-	-	-
7W	55	-	-	-	-	-	-	-	-	-	-	-
7M	54	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-	-
CO9W	10	-	-	-	-	-	-	-	-	-	-	150
9M	205	-	-	-	-	-	-	-	-	-	150	2050
9P	-	-	-	-	-	-	-	-	-	-	-	-
8W	-	-	-	-	-	-	-	-	-	-	-	-
8M	-	-	-	-	-	-	-	-	-	-	-	-
8P	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL STOCKED	194389	120238	77379	145336	508347	303341	127313	84860	48526	242583	9886	1667809

TABLE 3 E

NET VOLUME OF SAWTIMBER LIBBY RANGER DISTRICT

STR/TA	ACREAGE	W. PINE	P. PINE	LP AND	LARCH	D. FIR	G. FIR	HEMLOCK	CEDAR	SPRUCE	COTTON	TOTAL
				WB PINE			A. FIR				WOOD	
NET VOLUME M FT BM (SCRIBNER)												
W9W	1722	21969	480	358	3581	3831	1309	2977	1775	4916	1395	42591
9M	6500	36491		2301	22308	5408	10790	8704	9503	11700	-	107205
9P	850	2386		301	1457	353	685	552	618	506	-	6858
8W	19	28		2	9	1	4	2	1	1	-	48
8M	243	240			75	12	41	15	5	8	-	396
8P	59	13			11	2	1		1	4	-	32
7W	590	-									-	-
7M	24	-									-	-
7P	136	-									-	-
P9W	628	138	3066	168	673	2152	57		34		-	6288
9M	14719	2840	62378	3444	13615	43789	1133		692		-	127891
9P	19297	-	27691		4052	30123					-	61866
8W	542	-	650			163					-	813
8M	2921	-	2921			584					-	3505
8P	3950	-	1580			394					-	1974
7W	107	-									-	-
7M	755	-									-	-
7P	464	-									-	-
LP9W	101	-								196	-	1038
9M	-	-		563	109	118	52				-	-
9P	24	-		93			13				-	106
8W	21009	483		14664	28531	9160	2059			3004	-	57901
8M	8525	-		14902	4731		1526			895	-	22054
8P	5438	-									-	-
7W	10881	-									-	-
7M	585	-									-	-
7P	1276	-									-	-
LDF9W	19237	3290		19718	127753	65731	9195			16735	-	242482
9M	47515	22902	20289	22190	142307	120023	7983	1425	8458	23092	-	368669
9P	44179	2695	47891	18112	83587	61144	3048	9764	1900	-	-	228141
8W	18571	-	3621	16491	3938	1077	724			1207	-	27058
8M	7369	-		10412	3817	811			214		-	15254

TABLE 3 E (Continued)

NET VOLUME M FT BM (SCRIBNER)

STRATA	ACREAGE	W. PINE	P. PINE	LP AND WB PINE	LARCH	D. FIR	G. FIR A. FIR	HENLOCK	CEDAR	SPRUCE	COTTON WOOD	TOTAL
8P	2968	-	-	-	2621	938	261	-	-	-	-	3820
7W	3034	-	-	-	-	-	-	-	-	-	-	-
7M	1158	-	-	-	-	-	-	-	-	-	-	-
7P	1253	-	-	-	-	-	-	-	-	-	-	-
SAF9W	542	221	-	-	-	-	1057	51	29	6532	-	9675
9M	5604	624	-	-	1306	479	24269	1191	3265	48222	-	117946
9P	7946	-	-	-	23136	14137	20310	-	1661	27914	-	72197
8W	310	-	-	-	-	-	-	-	-	886	-	886
8M	1135	-	-	-	-	-	-	-	-	2228	-	2228
8P	1114	-	-	-	-	-	-	-	-	2347	-	2347
7W	161	-	-	-	-	-	-	-	-	-	-	-
7M	-	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-	-
CHGF9W	85	-	-	-	-	-	-	-	-	-	-	-
9M	843	521	-	-	561	22	65	377	84	-	16	564
9P	283	471	-	-	-	2075	289	316	1618	589	-	6747
8W	-	-	-	-	-	-	413	549	436	-	182	2279
8M	50	24	-	-	-	9	44	22	14	1	-	143
8P	-	-	-	-	-	-	-	-	-	-	-	-
7W	-	-	-	-	-	-	-	-	-	-	-	-
7M	-	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-	-
CO9W	-	-	-	-	-	-	-	-	-	-	-	-
9M	137	-	-	-	-	-	-	-	-	-	-	-
9P	367	-	-	-	-	-	-	-	-	-	-	-
8W	18	-	-	-	-	-	-	-	-	-	-	-
8M	43	-	-	-	-	-	-	-	-	-	-	-
8P	190	-	-	-	-	-	-	-	-	-	-	-
TOTAL	269477	95336	170567	151343	480526	349334	85067	25945	30308	150983	4799	1544208

TABLE 3 F

NET VOLUME OF SAWTIMBER FISHER RIVER DISTRICT

STRATA	ACREAGE:	W. PINE	P. PINE:	LP AND:	LARCH	D. FIR	G. FIR:	HEMLOCK	CEDAR:	SPRUCE	COTTON:	TOTAL
				WB PINE:			A. FIR:				WOOD	
VOLUME M FT BM (SCRIBNER)												
W9W	372	4746	104	77	773	828	283	643	384	1062	301	9201
9M	809	4542	-	286	2776	673	1343	1084	1183	1456	-	13343
9P	40	112	-	14	69	17	32	26	29	24	-	323
8W	-	-	-	-	-	-	-	-	-	-	-	-
8M	-	-	-	-	-	-	-	-	-	-	-	-
8P	-	-	-	-	-	-	-	-	-	-	-	-
7W	-	-	-	-	-	-	-	-	-	-	-	-
7M	-	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-	-
P9W	3483	763	17011	934	3730	11940	313	-	188	-	-	34879
9M	28324	5467	120036	6628	26200	84263	2181	-	1331	-	-	246106
9P	13349	-	19156	-	2803	20838	-	-	-	-	-	42797
8W	430	-	516	-	-	129	-	-	-	-	-	645
8M	1185	-	1185	-	-	237	-	-	-	-	-	1422
8P	719	-	288	-	-	72	-	-	-	-	-	360
7W	-	-	-	-	-	-	-	-	-	-	-	-
7M	88	-	-	-	-	-	-	-	-	-	-	-
7P	306	-	-	-	-	-	-	-	-	-	-	-
LP9W	405	-	-	2257	437	473	210	-	-	785	-	4162
9M	216	-	-	1204	232	253	112	-	-	419	-	2220
9P	260	-	-	1012	-	-	138	-	-	-	-	1150
8W	21697	499	-	15145	29465	9460	2126	-	-	3103	-	59798
8M	13786	-	-	24098	7650	-	2468	-	-	1448	-	35664
8P	1626	-	-	-	-	-	-	-	-	-	-	-
7W	3947	-	-	-	-	-	-	-	-	-	-	-
7M	632	-	-	-	-	-	-	-	-	-	-	-
7P	1088	-	-	-	-	-	-	-	-	-	-	-
LDF9W	9102	1556	-	9330	60445	31129	4351	-	-	7919	-	114731
9M	64419	31050	27507	30084	192935	162722	10822	1933	11467	31307	-	499827
9P	17092	1043	18528	7008	32338	23555	1179	3777	735	-	-	88263
8W	10478	-	2043	9304	2221	608	409	-	-	681	-	15266

TABLE 3 F (Continued)

VOLUME M FT BM (SCRIBNER)

STRATA	ACREAGE	W. PINE	P. PINE	LP AND	LARCH	D.FIR	G. FIR	HEMLOCK	CEDAR	SPRUCE	COTTON	TOTAL
:	:	:	:	WB PINE:	:	:	A. FIR:	:	:	:	WOOD	:
8M	13824	-	-	19533	7161	1521	-	-	401	-	-	28616
8P	2695	-	-	2379	852	237	-	-	-	-	-	3468
7W	682	-	-	-	-	-	-	-	-	-	-	-
7M	556	-	-	-	-	-	-	-	-	-	-	-
7P	276	-	-	-	-	-	-	-	-	-	-	-
SAF9W	170	69	-	410	150	-	332	16	9	2049	-	3035
9M	3736	243	-	9000	5499	1207	9441	463	1270	18758	-	45881
9P	1110	-	-	-	3117	-	2837	-	232	3899	-	10085
8W	130	-	-	-	-	-	-	-	-	371	-	371
8M	95	-	-	-	-	-	-	-	-	186	-	186
8P	231	-	-	-	-	-	-	-	-	486	-	486
7W	-	-	-	-	-	-	-	-	-	-	-	-
7M	86	-	-	-	-	-	-	-	-	-	-	-
7P	6	-	-	-	-	-	-	-	-	-	-	-
CGGF9W	255	-	-	-	66	-	196	1130	252	-	50	1694
9M	290	179	-	193	714	268	99	109	557	202	-	2321
9P	-	-	-	-	-	-	-	-	-	-	-	-
8W	-	-	-	-	-	-	-	-	-	-	-	-
8M	-	-	-	-	-	-	-	-	-	-	-	-
8P	-	-	-	-	-	-	-	-	-	-	-	-
7W	-	-	-	-	-	-	-	-	-	-	-	-
7M	-	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-	-
CO9W	-	-	-	-	-	-	-	-	-	-	-	-
9M	-	-	-	-	-	-	-	-	-	-	-	-
9P	-	-	-	-	-	-	-	-	-	-	-	-
8W	-	-	-	-	-	-	-	-	-	-	-	-
8M	-	-	-	-	-	-	-	-	-	-	-	-
8P	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL STOCKED	217995	50269	206374	138896	379634	350530	38872	9181	18038	74155	351	1266300

TABLE 3 C

NET VOLUME OF SAWTIMBER WARLAND DISTRICT

STRATA	ACREAGE	W. PINE	P. PINE	LP AND WB PINE	LARCH	D. FIR	G. FIR	HEMLOCK	CEDAR	SPRUCE	COTTON WOOD	TOTAL
VOLUME M FT BM (SCRIBNER)												
W9W	-	192	-	-	-	659	-	-	-	-	-	-
9M	-	-	-	68	-	-	160	319	257	345	-	3167
9P	-	-	-	-	-	-	-	-	-	-	-	-
8W	-	-	-	-	-	-	-	-	-	-	-	-
8M	-	-	-	-	-	-	-	-	-	-	-	-
8P	-	-	-	-	-	-	-	-	-	-	-	-
7W	-	-	-	-	-	-	-	-	-	-	-	-
7M	-	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-	-
P9W	-	568	124	152	608	1947	51	-	31	-	-	5687
9M	24868	4800	105390	5819	23003	73982	1915	-	1168	-	-	216077
9P	12116	-	17387	-	2544	18913	-	-	-	-	-	38844
8W	35	-	42	-	-	11	-	-	-	-	-	53
8M	471	-	471	-	-	94	-	-	-	-	-	565
8P	408	-	163	-	-	41	-	-	-	-	-	204
7W	5	-	-	-	-	-	-	-	-	-	-	-
7M	37	-	-	-	-	-	-	-	-	-	-	-
7P	282	-	-	-	-	-	-	-	-	-	-	-
LP9W	-	-	-	-	-	-	-	-	-	-	-	-
9M	-	-	-	-	-	-	-	-	-	-	-	-
9P	-	-	-	-	-	-	-	-	-	-	-	-
8W	10292	237	-	7184	13976	4487	1009	-	-	1472	-	28365
8M	15248	-	-	26654	8463	-	2729	-	-	1601	-	39447
8P	258	-	-	-	-	-	-	-	-	-	-	-
7W	5188	-	-	-	-	-	-	-	-	-	-	-
7M	704	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-	-
LDF9W	3175	543	-	3254	21098	10839	1518	-	-	2762	-	40021
9M	50258	24225	21460	23470	150524	126952	8443	1508	8946	24425	-	389953
9P	4557	278	4940	1868	8622	6307	314	1007	196	-	-	23532
8W	6677	-	1302	5929	1416	387	260	-	-	434	-	9728

TABLE 3 G (Continued)

VOLUME M FT BM (SCRIBNER)

STRATA	ACREAGE	W. PINE	P. PINE	LP AND LARCH	D. FIR	G. FIR	HEMLOCK	CEDAR	SPRUCE	COTTON	TOTAL
				VB PINE		A, FIR				WOOD	
8W	14630	-	-	20672	1609	-	-	424	-	-	30284
8P	551	-	-	487	48	-	-	-	-	-	709
7W	842	-	-	-	-	-	-	-	-	-	-
7M	206	-	-	-	-	-	-	-	-	-	-
7P	45	-	-	-	-	-	-	-	-	-	-
SAFGW	333	137	-	802	294	650	31	18	4012	-	5944
9M	2792	181	-	6726	4110	7056	346	949	14018	-	34288
9P	778	-	-	-	2184	1989	-	163	2733	-	7069
8W	738	-	-	-	-	-	-	-	2108	-	2108
8M	738	-	-	-	-	-	-	-	1449	-	1449
8P	69	-	-	-	-	-	-	-	145	-	145
7W	5	-	-	-	-	-	-	-	-	-	-
7M	157	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-
CHFGW	-	-	-	-	-	-	-	-	-	-	-
9M	366	226	-	244	901	126	137	702	255	-	2929
9P	-	-	-	-	-	-	-	-	-	-	-
8W	-	-	-	-	-	-	-	-	-	-	-
8M	93	46	-	-	55	82	41	25	2	-	267
8P	-	-	-	-	-	-	-	-	-	-	-
7W	-	-	-	-	-	-	-	-	-	-	-
7M	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-
COGW	-	-	-	-	-	-	-	-	-	-	-
9M	-	-	-	-	-	-	-	-	-	-	-
9P	-	-	-	-	-	-	-	-	-	-	-
8W	-	-	-	-	-	-	-	-	-	-	-
8M	-	-	-	-	-	-	-	-	-	-	-
8P	-	-	-	-	-	-	-	-	-	-	-
TOTAL STOCKED	157682	31875	153929	103329	246158	247092	26461	12903	55761	-	880835

TABLE 3 H

NET VOLUME OF SAWTIMBER YALAK RANGER DISTRICT

STRATA	ACREAGE	W. PINE	P. PINE	LP AND	LARCH	D. FIR	G. FIR	HEMLOCK	CEDAR	SPRUCE	COTTON	TOTAL
:	:	:	:	WB PINE	:	:	A. FIR	:	:	:	WOOD	:
VOLUME M FT BM (SCRIBNER)												
W9W	2520	32151	703	524	5239	5607	1915	4357	2598	7195	2041	62330
9M	-	-	-	-	-	-	-	-	-	-	-	-
9P	-	-	-	-	-	-	-	-	-	-	-	-
8W	-	-	-	-	-	-	-	-	-	-	-	-
8M	-	-	-	-	-	-	-	-	-	-	-	-
8P	-	-	-	-	-	-	-	-	-	-	-	-
7W	-	-	-	-	-	-	-	-	-	-	-	-
7M	-	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-	-
P9W	-	-	-	-	-	-	-	-	-	-	-	-
9M	87	17	369	20	80	259	7	-	4	-	-	756
9P	-	-	-	-	-	-	-	-	-	-	-	-
8W	-	-	-	-	-	-	-	-	-	-	-	-
8M	-	-	-	-	-	-	-	-	-	-	-	-
8P	-	-	-	-	-	-	-	-	-	-	-	-
7W	-	-	-	-	-	-	-	-	-	-	-	-
7M	-	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-	-
LP9W	2456	-	-	13687	2643	2871	1275	-	-	4762	-	25238
9M	4659	-	-	25065	5013	5446	2418	-	-	9034	-	47876
9P	3464	-	-	13482	-	-	1839	-	-	-	-	15321
8W	20508	473	-	14315	27850	8941	2010	-	-	2932	-	56521
8M	6721	-	-	11748	3730	-	1203	-	-	706	-	17387
8P	1149	-	-	-	-	-	-	-	-	-	-	-
7W	16073	-	-	-	-	-	-	-	-	-	-	-
7M	2147	-	-	-	-	-	-	-	-	-	-	-
7P	1332	-	-	-	-	-	-	-	-	-	-	-
LDE9W	32874	5621	-	33696	218317	112429	15714	-	-	28600	-	414377
9M	40554	19547	-	18939	121459	102439	6813	1217	7219	19708	-	314658
9P	19741	1204	-	8094	37350	27322	1362	4363	849	-	-	101943
8W	19160	-	-	17014	4063	1111	747	-	-	1245	-	27916
8M	4991	-	-	7052	2585	549	-	-	145	-	-	10331
8P	540	-	-	476	171	48	-	-	-	-	-	695

TABLE 3 H (Continued)

VOLUME M FT BM (SCRIBNER)

STRATA	ACREAGE	W. PINE	P. PINE	LP AND WB PINE	LARCH	D. FIR	G. FIR	HEMLOCK	CEDAR	STRUCE	COTTONWOOD	TOTAL
7W	1380	-	-	-	-	-	-	-	-	-	-	-
7M	395	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-	-
SAF9W	13895	5669	-	33473	12283	-	27110	1306	750	167448	-	248039
9M	10844	705	-	26123	15962	3503	27402	1345	3687	54448	-	133175
9P	5030	-	-	-	14124	-	12857	-	1051	17671	-	45703
8W	614	-	-	-	-	-	-	-	-	1754	-	1754
8M	746	-	-	-	-	-	-	-	-	1464	-	1464
8P	235	-	-	-	-	-	-	-	-	495	-	495
7W	-	-	-	-	-	-	-	-	-	-	-	-
7M	1433	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-	-
CHGF9W	65	-	-	-	17	-	50	288	64	-	13	432
9M	-	-	-	-	-	-	-	-	-	-	-	-
9P	-	-	-	-	-	-	-	-	-	-	-	-
8W	-	-	-	-	-	-	-	-	-	-	-	-
8M	-	-	-	-	-	-	-	-	-	-	-	-
8P	-	-	-	-	-	-	-	-	-	-	-	-
7W	-	-	-	-	-	-	-	-	-	-	-	-
7M	-	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-	-
CO9W	-	-	-	-	-	-	-	-	-	-	-	-
9M	-	-	-	-	-	-	-	-	-	-	-	-
9P	-	-	-	-	-	-	-	-	-	-	-	-
8W	-	-	-	-	-	-	-	-	-	-	-	-
8M	-	-	-	-	-	-	-	-	-	-	-	-
8P	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL STOCKED	213613	65387	43524	224608	470886	270525	102722	12876	16367	317462	2054	1526411

TABLE 3 I

NET VOLUME OF SAWTIMBER STATE

STRATA	ACREAGE:	W. PINE	P. PINE	LP AND WB PINE:	LARCH	D. FIR	G. FIR:	HEMLOCK	CEDAR	SPRUCE	COTTON:	TOTAL
:	:	:	:	:	:	:	:	:	:	:	WOOD	:
VOLUME M FT BM (SCRIBNER)												
W9W	16	205		4	33	36	12	28	16	46	13	396
9M	21	118			72	17	35	28	31	38		346
9P	42	119		15	72	17	34	27	30	25		339
8W	-	-		-	-	-	-	-	-	-	-	-
8M	-	-		-	-	-	-	-	-	-	-	-
8P	-	-		-	-	-	-	-	-	-	-	-
7W	-	-		-	-	-	-	-	-	-	-	-
7M	-	-		-	-	-	-	-	-	-	-	-
7P	-	-		-	-	-	-	-	-	-	-	-
P9W	912	200	4455		977	3126	82		49			9133
9M	7405	1429	31382	244	6850	22030	570		348			64342
9P	5585	-	8015	1733	1173	8718	-					17906
8W	8	-	10	-	-	2	-					12
8M	230	-	230	-	-	46	-					276
8P	435	-	174	-	-	44	-					218
7W	5	-	-	-	-	-	-					-
7M	263	-	-	-	-	-	-					-
7P	-	-	-	-	-	-	-					-
LP9W	185	-	-	1031	199	216	96			359		1901
9M	58	-	-	324	62	68	30			112		596
9P	-	-	-	-	-	-	-			-		-
8W	581	13	-	406	789	253	57			83		1601
8M	492	-	-	860	273	-	88			52		1273
8P	198	-	-	-	-	-	-			-		-
7W	152	-	-	-	-	-	-			-		-
7M	5	-	-	-	-	-	-			-		-
7P	65	-	-	-	-	-	-			-		-
LDF9W	3586	613	-	3676	23815	12264	1714			3120		45202
9M	11449	5518	4889	5347	34291	28920	1923	343	2038	5564		88833

TABLE 3 I (Continued)

VOLUME M FT BM (SCRIBNER)

STRATA	ACREAGE	W. PINE	P. PINE	LP AND WB PINE	LARCH	D. FIR	G. FIR: A. FIR	HENLOCK	CEDAR	SPRUCE	COTTON: WOOD	TOTAL
9P	6332	386	6864	2596	11981	8763	437	1399	272	-	-	32698
8W	567	-	111	503	120	33	22	-	-	37	-	826
8M	723	-	-	1021	375	80	-	-	21	-	-	1497
8P	1752	-	-	1547	554	154	-	-	-	-	-	2255
7W	95	-	-	-	-	-	-	-	-	-	-	-
7M	216	-	-	-	-	-	-	-	-	-	-	-
7P	207	-	-	-	-	-	-	-	-	-	-	-
SAF9W	-	-	-	-	-	-	-	-	-	-	-	-
9M	173	11	-	417	255	56	437	21	59	869	-	2125
9P	110	-	-	-	309	-	281	-	23	386	-	999
8W	-	-	-	-	-	-	-	-	-	-	-	-
8M	-	-	-	-	-	-	-	-	-	-	-	-
8P	13	-	-	-	-	-	-	-	-	27	-	27
7W	-	-	-	-	-	-	-	-	-	-	-	-
7M	-	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-	-
CHGF9W	20	-	-	-	5	-	15	89	20	-	4	133
9M	-	-	-	-	-	-	-	-	-	-	-	-
9P	-	-	-	-	-	-	-	-	-	-	-	-
8W	-	-	-	-	-	-	-	-	-	-	-	-
8M	-	-	-	-	-	-	-	-	-	-	-	-
8P	-	-	-	-	-	-	-	-	-	-	-	-
7W	-	-	-	-	-	-	-	-	-	-	-	-
7M	-	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-	-
CO9W	28	-	-	-	-	-	-	-	-	-	350	350
9M	-	-	-	-	-	-	-	-	-	-	-	-
9P	-	-	-	-	-	-	-	-	-	-	-	-
8W	-	-	-	-	-	-	-	-	-	-	-	-
8M	-	-	-	-	-	-	-	-	-	-	-	-
8P	166	-	-	-	-	-	-	-	-	-	-	-
8W	-	-	-	-	-	-	-	-	-	-	-	-
8M	-	-	-	-	-	-	-	-	-	-	-	-
8P	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL STOCKED	42095	8612	56134	19730	82205	84843	5833	1935	2907	10718	367	273284

TABLE 3 J

VOLUME OF SAWTIMBER INDUSTRIAL PRIVATE

STRATA	ACREAGE:	W. PINE	P. PINE	LP AND	LARCH	D. FIR	G. FIR	HEMLOCK	CEDAR	SPRUCE	COTTON:	TOTAL
				WB PINE:			A. FIR:				WOOD	
VOLUME, M FT BM (SCRIBNER)												
W9W	194	2476		54	40	403	432	147	335	554	157	4798
9M	575	3228			204	1973	478	955	770	1034		9483
9P	38	107			13	65	16	31	25	22		307
8W												
8M												
8P												
7W	15											
7M												
7P												
P9W	9392	2057		45870	2517	10059	32196	845	507			94051
9M	71085	13719		301258	16634	65754	211478	5474	3341			617658
9P	21681			31112		4553	33844					69509
8W	718			862			215					1077
8M	1496			1496			299					1795
8P	1448			579			145					724
7W	1199											
7M	588											
7P	582											
LP9W	228				1271	245	267	118		442		2343
9M	232				1293	250	271	120		450		2384
9P	288				1121			153				1274
8W	14249	328			9945	19350	6213	1396		2038		39270
8M	9256				16179	5137		1657		972		23945
8P	1440											
7W	3000											
7M	964											
7P	407											
LDF9W	22900	3916			23473	152079	78318	10946		19923		288655
9M	81909	39480			38252	245317	206902	13761		39808		635532
9P	18644	1137			7644	35275	25804	1286				96278
8W	8740				1704	1853	507	341		568		12734
8M	8553				12085	4431	941					17705
8P	1243				1096	392	109					1597

TABLE 3 J (Continued)

VOLUME M FT BM (SCRIBNER)

STRATA	ACREAGE	W. PINE	P. PINE	LP AND WB PINE	LARCH	D. FIR	G. FIR	HEMLOCK	CEDAR	SPRUCE	COTTON WOOD	TOTAL
7W	870	-	-	-	-	-	-	-	-	-	-	-
7M	276	-	-	-	-	-	-	-	-	-	-	-
7P	38	-	-	-	-	-	-	-	-	-	-	-
SAFGM	63	26	-	152	56	-	-	-	3	759	-	1125
9M	1488	97	-	3585	2190	481	123	6	506	7470	-	18274
9P	562	-	-	-	1578	-	3760	185	117	1975	-	5106
8W	21	-	-	-	-	-	1436	-	-	60	-	60
8M	-	-	-	-	-	-	-	-	-	-	-	-
8P	116	-	-	-	-	-	-	-	-	244	-	244
7W	-	-	-	-	-	-	-	-	-	-	-	-
7M	-	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-	-
CHFG9M	1709	-	-	-	444	-	1314	7574	1682	-	332	11346
9M	1702	1052	-	1134	4189	1571	584	638	3265	1190	-	13623
9P	907	1512	-	-	-	731	1324	1759	1396	-	583	7305
8W	-	-	-	-	-	-	-	-	-	-	-	-
8M	43	21	-	-	8	25	37	19	12	1	-	123
8P	-	-	-	-	-	-	-	-	-	-	-	-
7W	15	-	-	-	-	-	-	-	-	-	-	-
7M	-	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-	-
CO9M	289	-	-	-	-	-	-	-	-	-	-	-
9M	217	-	-	-	-	-	-	-	-	-	3335	3335
9P	-	-	-	-	-	-	-	-	-	-	2170	2170
8W	-	-	-	-	-	-	-	-	-	-	-	-
8M	154	-	-	-	-	-	-	-	-	-	-	-
8P	18	-	-	-	-	-	-	-	-	-	-	-
TOTAL STOCKED	289552	69156	438120	174399	55601	601243	45808	17868	27528	77510	6577	1983830

TABLE 3 K

VOLUME OF SCEPTER SMALL PRIVATE

STRATA	ACREAGE	W. PINE	P. PINE	LP AND : WB PINE:	LARCH	D. FIR	G. FIR:	HEMLOCK	CEDAR	SPRUCE	COTTON:	TOTAL
:	:	:	:	:	:	:	A. FIR:	:	:	:	WOOD	:
VOLUME M FT BM (SCRIBNER)												
W9W	72	919	20	15	150:	160	55	124	74	206	58	1781
9M	142	797	-	50	487:	118	236	190	208	256	-	2342
9P	11	31	-	4	19:	5	9	7	8	6	-	89
8W	-	-	-	-	-	-	-	-	-	-	-	-
8M	-	-	-	-	-	-	-	-	-	-	-	-
8P	-	-	-	-	-	-	-	-	-	-	-	-
7W	-	-	-	-	-	-	-	-	-	-	-	-
7M	-	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-	-
P9W	334	73	1632	90	358:	1144	30	-	18	-	-	3345
9M	5087	982	21559	1190	4705:	15134	392	-	239	-	-	44201
9P	8978	-	12883	-	1885:	14015	-	-	-	-	-	28783
8W	585	-	702	-	175:	-	-	-	-	-	-	877
8M	4658	-	4658	-	932:	-	-	-	-	-	-	5590
8P	5111	-	2044	-	511:	-	-	-	-	-	-	2555
7W	415	-	-	-	-	-	-	-	-	-	-	-
7M	1998	-	-	-	-	-	-	-	-	-	-	-
7P	443	-	-	-	-	-	-	-	-	-	-	-
LP9W	119	-	-	663	128:	139	62	-	-	231	-	1223
9M	51	-	-	284	55:	60	26	-	-	99	-	524
9P	50	-	-	194	-	-	27	-	-	-	-	221
8W	4649	107	-	3245	6312:	2027	456	-	-	665	-	12812
8M	1978	-	-	3458	1098:	-	354	-	-	207	-	5117
8P	1560	-	-	-	-	-	-	-	-	-	-	-
7W	1915	-	-	-	-	-	-	-	-	-	-	-
7M	915	-	-	-	-	-	-	-	-	-	-	-
7P	806	-	-	-	-	-	-	-	-	-	-	-
LDF9W	7550	1291	-	7739	50140:	25821	3609	-	-	6568	-	95168
9M	27227	13123	11626	12715	81545:	68776	4574	817	4846	13232	-	211254
9P	29936	1826	32451	12274	56639:	41431	2066	6616	1287	-	-	154590
8W	4910	-	957	4360	1042:	285	191	-	-	319	-	7154
8M	11912	-	-	16832	6170:	1311	-	-	345	-	-	24658

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TABLE 3 K (Continued)

VOLUME M FT BM (SCRIBNER)

STRATA	ACREAGE	W. PINE	P. PINE	LP AND WB PINE	LARCH	D. FIR	G. FIR A, FIR	HEMLOCK	CEDAR	SPRUCE	COTTON WOOD	TOTAL
8P	13340	-	-	11779	4215	1175	-	-	-	-	-	17169
7W	2004	-	-	-	-	-	-	-	-	-	-	-
7M	2028	-	-	-	-	-	-	-	-	-	-	-
7P	959	-	-	-	-	-	-	-	-	-	-	-
SAF9W	321	131	-	773	284	-	626	30	17	3869	-	5730
9M	436	28	-	1050	642	141	1102	54	148	2190	-	5355
9P	949	-	-	-	2665	-	2426	-	198	3334	-	8623
8W	60	-	-	-	-	-	-	-	-	171	-	171
8M	117	-	-	-	-	-	-	-	-	230	-	230
8P	189	-	-	-	-	-	-	-	-	398	-	398
7W	-	-	-	-	-	-	-	-	-	-	-	-
7M	5	-	-	-	-	-	-	-	-	-	-	-
7P	-	-	-	-	-	-	-	-	-	-	-	-
CHGF9W	661	-	-	-	172	-	508	2930	650	-	128	4388
9M	758	468	-	505	1865	700	260	284	1455	530	-	6067
9P	216	360	-	-	-	174	315	420	332	-	139	1740
8W	100	64	-	21	77	39	101	90	18	-	-	410
8M	61	30	-	-	11	36	53	27	17	1	-	175
8P	-	-	-	-	-	-	-	-	-	-	-	-
7W	5	-	-	-	-	-	-	-	-	-	-	-
7M	20	-	-	-	-	-	-	-	-	-	-	-
7P	45	-	-	-	-	-	-	-	-	-	-	-
CO9W	55	-	-	-	-	-	-	-	-	-	-	-
9M	362	-	-	-	-	-	-	-	-	-	825	825
9P	812	-	-	-	-	-	-	-	-	-	3620	3620
8W	198	-	-	-	-	-	-	-	-	-	4060	4060
8M	87	-	-	-	-	-	-	-	-	-	-	-
8P	40	-	-	-	-	-	-	-	-	-	-	-
7M	6	-	-	-	-	-	-	-	-	-	-	-
A7W	42	-	-	-	-	-	-	-	-	-	-	-
7M	142	-	-	-	-	-	-	-	-	-	-	-
TOTAL STOCKED	145430	20230	88532	77241	222282	172691	17478	11589	9860	32512	8830	661245

TABLE 4. NET PARTIAL CUBIC VOLUME IN SAWTIMBER TREES ON

UNRESERVED LAND WITHIN THE KOOTENAI WORKING CIRCLE

NATIONAL FOREST

	:P.	: LP	: D.	:G. FIR:	:	:	:	:	:	:	:	
	:W. PINE:PINE	:PINE	:LARCH	: FIR	:A. FIR:	HEM.	:CEDAR:	SPRUCE	:COT:	: TOTAL	:	
STRATA	CUBIC FEET IN THOUSANDS											
W9W:	31881	: 636:	542:	5162:	5775:	2063:	4785:	3159:	6907:	2015:	62925:	
9M:	14538	:-	: 965:	8833:	2236:	4667:	3836:	4679:	4520:	-	44274:	
9P:	598	:-	: 79:	363:	91:	186:	153:	191:	124:	-	1785:	
8W:	813	:-	: 66:	260:	38:	117:	59:	13:	31:	-	1397:	
8M:	247	:-	:-	: 78:	12:	47:	15:	5:	7:	-	411:	
8P:	1	:-	:-	: 1:	1:	1:	1:	1:	1:	-	7:	
P9W:	279	: 5705:	364:	1370:	4578:	127:-	: 91:-	-	-	-	12514:	
9M:	3760	: 74842:	4769:	17885:	60074:	1651:-	: 1192:-	-	-	-	164173:	
9P:-		: 16821:-	-	: 2682:	20966:-	-	-	-	-	-	40469:	
8W:-		: 266:-	-	: 66:-	-	-	-	-	-	-	332:	
8M:-		: 993:-	-	: 199:-	-	-	-	-	-	-	1192:	
8P:-		: 440:-	-	: 110:-	-	-	-	-	-	-	550:	
LP9W:-		:-	: 8885:	1631:	1846:	855:-	-	: 2859:	-	-	16076:	
9M:-		:-	: 16105:	2955:	3346:	1549:-	-	: 5182:	-	-	29137	
9P:-		:-	: 5705:-	-	-	805:-	-	-	-	-	6510:	
8W:	614	:-	: 19049:	36254:	11920:	2827:-	-	: 3687:	-	-	74351:	
8M:-		:-	: 22358:	6915:-	-	2362:-	-	: 1325:	-	-	32960:	
8P:-		:-	:-	-	-	-	-	-	-	-	-	
LA-DF 9W:	5433	:-	: 34409:	211131:	113640:	16601:-	-	: 27014:	-	-	408228:	
9M:	38631	: 31056:	39388:	238980:	210954:	14771:	2651:	17800:	37873:	-	632104:	
9P:	2215	: 35604:	15502:	67802:	51958:	2726:	8858:	2044:	-	-	186709:	
8W:-		: 4412:	20692:	4832:	1260:	840:-	-	: 1366:	-	-	33402:	
8M:-		:-	: 20333:	7276:	1624:-	-	: 520:	-	-	-	29753:	
8P:-		:-	: 3575:	1258:	365:-	-	-	-	-	-	5198:	
S-AF 9W:	3922	:-	: 25266:	8483:-	-	20432:	1003:	684:	112832:	-	172622:	
9M:	1218	:-	: 39665:	26965:	6176:	50538:	2523:	7742:	89681:	-	224508	
9P:-		:-	: 34763:-	-	-	40880:-	-	: 3235:	42409:	-	121287:	
8W:-		:-	:-	-	-	-	-	: 3161:	-	-	3161:	
8M:-		:-	:-	-	-	-	-	: 2493:	-	-	2493:	
8P:-		:-	:-	-	-	-	-	: 3697:	-	-	3697:	
C-H-GF9W:-		:-	: 953:-	-	-	3031:	18014:	4469:	-	: 727:	27194:	
9M:	1850	:-	: 960:	3361:	1317:	506:	571:	3259:	928:	-	11752:	
9P:	605	:-	:-	-	305:	569:	779:	690:	-	: 238:	3186:	
8W:	19	:-	: 7:	24:	12:	34:	28:	6:	-	-	130:	
8M:	18	:-	: 7:	23:	36:	18:	11:	1:	-	-	114:	
8P:-		:-	:-	-	-	-	-	-	-	-	-	
CO 9W:	ESTIMATED:- NO DATA										: 30:	30:
9M:	"	:	"	"	:	:	:	:	:	:	880:	880:
9P:	"	:	"	"	:	:	:	:	:	:	531:	531:
8W	NO ESTIMATE -NO DATA										-	-
8M	"	"	"	"	:	:	:	:	:	:	-	-
8P	"	"	"	"	:	:	:	:	:	:	-	-
TOTALS :	105642	:170775:	278684:	690599:	498517:	168221:	43294:	49791:	346098:	4421:	2356042:	

TABLE 4 A

NET PARTIAL CUBIC VOLUME IN POLE TREES ON
UNRESERVED LAND WITHIN THE KOOTENAI WORKING CIRCLE
NATIONAL FOREST

STRATA	W.PINE	P.PINE	LP.PINE	LARCH	D. FIR	G. FIR A. FIR	HEMLOCK	CEDAR	SPRUCE	COT	TOTAL
CUBIC FEET IN THOUSANDS											
W9W	554	—	71	271	47	2216	377	448	153	—	4137
9M	2664	—	110	586	855	2419	1894	2773	1197	—	12498
9P	72	—	9	16	23	63	51	73	33	—	340
8W	1318	—	382	617	245	199	15	76	97	—	2949
8M	210	—	37	104	140	117	9	21	23	—	661
8P	4	—	1	1	1	1	1	1	4	—	14
P9W	73	61	1364	291	1036	176	—	—	—	—	3001
9M	917	826	18251	3852	13666	2201	—	—	—	—	39713
9P	—	2316	—	—	2316	—	—	—	—	—	4632
8W	—	443	—	111	—	—	—	—	—	—	554
8M	—	993	—	248	—	—	—	—	—	—	1241
8P	—	550	—	275	—	—	—	—	—	—	825
LP9W	—	—	3161	366	—	1817	—	—	1990	—	7334
9M	—	—	5728	664	—	3294	—	—	3606	—	13292
9P	—	—	4555	—	—	9375	—	—	462	—	14392
8W	—	1475	207078	14993	7251	9217	—	—	5039	737	245790
8M	—	—	64019	—	1037	9393	—	—	—	—	74449
8P	—	—	786	—	—	—	—	—	—	—	786
LA-DF9W	—	—	134919	—	15091	18412	—	—	—	—	168422
9M	12119	1515	196562	42418	64006	45448	9847	5302	23481	—	400698
9P	—	7836	65076	17377	17035	4429	—	2385	—	—	114138
8W	2941	3571	140647	43486	10504	5778	—	4412	3361	—	214700
8M	—	—	40926	15591	5197	195	—	—	—	—	61909
8P	—	—	3648	2955	1094	36	—	—	—	—	7733
S-AF9W	—	—	—	—	—	7388	365	—	2645	—	10398
9M	4349	—	22268	1827	—	9742	—	8003	23834	—	70023
9P	—	—	2941	2529	—	12587	—	1471	12294	—	31822
8W	—	—	—	—	—	1484	—	—	2916	—	4400
8M	—	—	—	—	—	1133	—	—	2225	—	3358
8P	—	—	—	—	—	4093	—	—	6669	—	10762
CH-GF9W	1022	—	—	5334	225	—	3880	191	1403	—	12055
9M	623	—	571	1441	273	78	—	649	330	—	3965
9P	—	—	—	—	—	33	27	139	—	—	199
8W	6	—	12	10	24	75	47	13	—	—	187
8M	1	—	14	—	8	38	14	6	2	—	83
8P	—	—	—	—	—	—	—	—	—	—	—
CO9W	—	—	No Estimation	—	—	No Data	—	—	—	—	—
9M	—	—	" "	—	—	" "	—	—	—	—	—
9P	—	—	" "	—	—	" "	—	—	—	—	—
8W	—	—	" "	—	—	" "	—	—	—	—	—
8M	—	—	" "	—	—	" "	—	—	—	—	—
8P	—	—	" "	—	—	" "	—	—	—	—	—
TOTAL	26873	19586	913136	155363	140074	151437	16527	25963	91764	737	1541460

TABLE 5

NET PARTIAL CUBIC VOLUME IN SAWTIMBER TREES ON
UNRESERVED LAND WITHIN THE KOOTENAI WORKING CIRCLE

STATE OF MONTANA

STRATA	:W.	:P.	:LP	:D.	:G. FIR:	:	:	:	:	:	:	TOTAL
	:PINE:	:PINE	:PINE	:LARCH	:FIR	:A. FIR:	HEM	:CEDAR:	SPRUCE	:COT	:	
M CUBIC FEET												
W9W: 43	:	1	:	1	:	7	:	8	:	3	:	85
9M: 25	:-	:	2	:	15	:	4	:	8	:	7	76
9P: 25	:-	:	3	:	15	:	4	:	8	:	6	74
8W:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8M:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8P:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
P9W: 42	:	858	:	55	:	206	:	689	:	19	:-	1882
9M: 304	:	6043	:	385	:	1444	:	4850	:	133	:-	13255
9P:-	:	1541	:-	:	246	:	1921	:-	:-	:-	:-	3708
8W:-	:	2	:-	:-	:	1	:-	:-	:-	:-	:-	3
8M:-	:	46	:-	:-	:	9	:-	:-	:-	:-	:-	55
8P:-	:	35	:-	:-	:	9	:-	:-	:-	:-	:-	44
LP9W:-	:-	:	229	:	42	:	48	:	22	:-	:-	414
9M:-	:-	:	105	:	19	:	22	:	10	:-	:-	190
9P:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8W: 3	:-	:	91	:	171	:	56	:	13	:-	:-	351
8M:-	:-	:	191	:	59	:-	:	20	:-	:-	:-	281
8P:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
LA-DF9W: 129	:-	:	818	:	5017	:	2700	:	394	:-	:-	9700
9M: 1168	:	939	:	1191	:	7224	:	6377	:	446	:	19108
9P: 82	:	1323	:	576	:	2520	:	1933	:	101	:	6940
8W:-	:	24	:	112	:	26	:	7	:	4	:-	180
8M:-	:-	:	226	:	81	:	18	:-	:-	:	6	331
8P:-	:-	:	343	:	121	:	35	:-	:-	:-	:-	499
S-AF9W:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
9M: 2	:-	:	79	:	54	:	12	:	101	:	5	447
9P:-	:-	:-	:-	:	65	:-	:	77	:-	:	6	227
8W:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8M:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8P:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:	6	6
C-H-GF9W:-	:-	:-	:-	:	1	:-	:	4	:	21	:	32
9M:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
9P:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8W:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8M:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8P:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
CO9W:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:	9	9
9M:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
9P:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8W:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8M:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8P:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
TOTAL	1823	:	10812	:	4407	:	17333	:	18703	:	1363	57897
	:	:	:	:	:	:	:	:	:	:	:	:

TABLE 5 A

NET PARTIAL CUBIC VOLUME IN POLE TREES ON
UNRESERVED LAND WITHIN THE KOOTENAI WORKING CIRCLE
STATE OF MONTANA
M CUBIC FEET

STRATA	:W.	:P. PINE:PINE	:LP PINE	:LARCH	:D. FIR	:G. FIR	:A. FIR	HEM	:CEDAR	:SPRUCE	:COT	:TOTAL
W9W:	1	:-	:-	:-	:-	3	1	1	:-	:-	:-	6
9M:	5	:-	:-	1	1	4	3	5	2	:-	:-	21
9P:	3	:-	1	1	1	2	2	3	1	:-	:-	14
8W:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8M:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8P:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
P9W:	11	9	205	44	156	26	:-	:-	:-	:-	:-	451
9M:	74	67	1474	311	1103	177	:-	:-	:-	:-	:-	3206
9P:-	:-	212	:-	:-	212	:-	:-	:-	:-	:-	:-	424
8W:-	:-	3	:-	:-	1	:-	:-	:-	:-	:-	:-	4
8M:-	:-	46	:-	:-	12	:-	:-	:-	:-	:-	:-	58
8P:-	:-	44	:-	:-	22	:-	:-	:-	:-	:-	:-	66
LP9W:-	:-	:-	82	9	:-	47	:-	:-	51	:-	:-	189
9M:-	:-	:-	26	3	:-	14	:-	:-	16	:-	:-	59
9P:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8W:-	:-	7	979	71	34	44	:-	:-	24	3	:-	1162
8M:-	:-	:-	547	:-	9	80	:-	:-	:-	:-	:-	636
8P:-	:-	:-	10	:-	:-	:-	:-	:-	:-	:-	:-	10
LA-DF9W:-	:-	:-	3206	:-	359	437	:-	:-	:-	:-	:-	4002
9M:	366	46	5942	1282	1935	1374	298	160	710	:-	:-	12113
9P:-	:-	291	2419	646	634	165	:-	87	:-	:-	:-	4242
8W:	16	19	759	235	57	31	:-	24	18	:-	:-	1159
8M:-	:-	:-	455	174	58	2	:-	:-	:-	:-	:-	689
8P:-	:-	:-	350	284	105	4	:-	:-	:-	:-	:-	743
S-AF9W:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
9M:	9	:-	44	4	:-	19	:-	16	47	:-	:-	139
9P:-	:-	:-	6	5	:-	24	:-	3	22	:-	:-	60
8W:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8M:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8P:-	:-	:-	:-	:-	:-	6	:-	:-	11	:-	:-	17
C-H-GF9W:	1	:-	:-	6	1	:-	4	:-	2	:-	:-	14
9M:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
9P:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8W:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8M:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8P:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
CO9W:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	6	6
9M:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
9P:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8W:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8M:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	37	:-	37
8P:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
TOTAL	486	744	16505	3076	4700	2459	308	299	904	46	:-	29527

* Less than 500 cubic feet

TABLE 6

NET PARTIAL CUBIC VOLUME IN SAWTIMBER TREES ON
UNRESERVED LANDS WITHIN THE KOOTENAI WORKING CIRCLE

INDUSTRIAL PRIVATE LANDS

CUBIC FEET IN THOUSANDS

STRATA	W	PINE	P.	LP	D.	G.	FIR	A.	FIR	HEM	CEDAR	SPRUCE	COT	TOTAL
W9W:	525	10	9	85	95	34	79	52	114	33				1036
9M:	684	-	45	416	105	220	181	220	213	-				2084
9P:	23	-	3	13	3	7	6	7	5	-				67
8W:	-	-	-	-	-	-	-	-	-	-				-
8M:	-	-	-	-	-	-	-	-	-	-				-
8P:	-	-	-	-	-	-	-	-	-	-				-
P9W:	432	8838	564	2122	7091	197	-	141	-	-				19385
9M:	2914	58005	3696	13862	46561	1280	-	924	-	-				127242
9P:	-	5984	-	954	7458	-	-	-	-	-				14396
8W:	-	172	-	-	43	-	-	-	-	-				215
8M:	-	299	-	-	60	-	-	-	-	-				359
8P:	-	116	-	-	29	-	-	-	-	-				145
LP9W:	-	-	282	52	58	27	-	-	91	-				510
9M:	-	-	287	53	60	27	-	-	92	-				519
9P:	-	-	249	-	-	35	-	-	-	-				284
8W:	71	-	2209	4203	1382	328	-	-	427	-				8620
8M:	-	-	3591	1111	-	379	-	-	213	-				5294
8P:	-	-	-	-	-	-	-	-	-	-				-
LA-DF9W:	824	-	5221	32037	17244	2519	-	-	4099	-				61944
9M:	8355	6717	8519	51685	45623	3194	573	3850	8190	-				136706
9P:	242	3897	1697	7420	5687	298	969	224	-	-				20434
8W:	-	367	1722	402	105	70	-	-	113	-				2779
8M:	-	-	2677	958	214	-	-	68	-	-				3917
8P:	-	-	243	86	25	-	-	-	-	-				354
S-AF9W:	5	-	35	12	-	28	1	1	156	-				238
9M:	21	-	679	461	106	865	43	132	1534	-				3841
9P:	-	-	-	332	-	391	-	31	405	-				1159
8W:	-	-	-	-	-	-	-	-	13	-				13
8M:	-	-	-	-	-	-	-	-	-	-				-
8P:	-	-	-	-	-	-	-	-	52	-				52
CH-CF9W:	-	-	-	94	-	299	1777	441	-	72				2683
9M:	223	-	252	882	345	133	150	854	243	-				3082
9P:	124	-	42	152	79	217	182	38	-	-				834
8W:	-	-	-	-	-	-	-	-	-	-				-
8M:	5	-	-	2	5	8	4	3	1	-				28
8P:	-	-	-	-	-	-	-	-	-	-				-
CO9W:	-	-	-	-	-	-	-	-	-	98				98
9M:	-	-	-	-	-	-	-	-	-	49				49
9P:	-	-	-	-	-	-	-	-	-	-				-
8W:	-	-	-	-	-	-	-	-	-	-				-
8M:	No Data:	-	-	-	-	-	-	-	-	-				-
8P:	" "	-	-	-	-	-	-	-	-	-				-
TOTAL	14448	84405	32022	117394	132378	10556	3965	6986	15961	252				418367

NET PARTIAL CUBIC VOLUME IN POLE TREES ON
UNRESERVED LAND WITHIN THE KOOTENAI WORKING CIRCLE

<u>INDUSTRIAL PRIVATE LAND</u>												
STRATA	:W. PINE	:P. PINE	:LP PINE	:LARCH	:D. FIR	:G. FIR	:HEM	:CEDAR	:SPRUCE	:COT	:TOTAL	
<u>M CUBIC FEET</u>												
W9W:	10	:-	:	1:	4	1	36	6	7	3	:-	68
9M:	125	:-	:	5:	28	40	114	89	131	56	:-	588
9P:	3	:-	*	:	1	1	2	2	3	1	:-	13
8W:	-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8M:	-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8P:	-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
P9W:	113	: 94	: 2113	: 451	: 1606	: 272	:-	:-	:-	:-	:-	4649
9M:	711	: 640	: 14146	: 2986	: 10592	: 1705	:-	:-	:-	:-	:-	30780
9P:	-	: 824	:-	:-	: 824	:-	:-	:-	:-	:-	:-	1648
8W:	-	: 287	:-	:-	: 72	:-	:-	:-	:-	:-	:-	359
8M:	-	: 299	:-	:-	: 75	:-	:-	:-	:-	:-	:-	374
8P:	-	: 145	:-	:-	: 72	:-	:-	:-	:-	:-	:-	217
LP9W:	-	:-	: 100	: 12	:-	: 58	:-	:-	: 63	:-	:-	233
9M:	-	:-	: 102	: 12	:-	: 59	:-	:-	: 64	:-	:-	237
9P:	-	:-	: 199	:-	:-	: 409	:-	:-	: 20	:-	:-	628
8W:	-	: 171	: 24010	: 1738	: 841	: 1069	:-	:-	: 584	: 85	:-	28498
8M:	-	:-	: 10283	:-	: 167	: 1509	:-	:-	:-	:-	:-	11959
8P:	-	:-	: 71	:-	:-	:-	:-	:-	:-	:-	:-	71
LA-DF9W:	-	:-	: 20473	:-	: 2290	: 2793	:-	:-	:-	:-	:-	25556
9M:	2621	: 328	: 42511	: 9174	: 13843	: 9829	: 2130	: 1146	: 5078	:-	:-	86660
9P:	-	: 858	: 7122	: 1902	: 1864	: 485	:-	: 260	:-	:-	:-	12491
8W:	245	: 297	: 11703	: 3618	: 874	: 481	:-	: 367	: 280	:-	:-	17865
8M:	-	:-	: 5388	: 2053	: 684	: 26	:-	:-	:-	:-	:-	8151
8P:	-	:-	: 249	: 201	: 75	: 2	:-	:-	:-	:-	:-	527
S-AF9W:	-	:-	:-	:-	:-	: 10	: 1	:-	: 3	:-	:-	14
9M:	74	:-	: 381	: 31	:-	: 167	:-	: 137	: 408	:-	:-	1198
9P:	-	:-	: 28	: 24	:-	: 120	:-	: 14	: 118	:-	:-	304
8W:	-	:-	:-	:-	:-	: 6	:-	:-	: 12	:-	:-	18
8M:	-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8P:	-	:-	:-	:-	:-	: 57	:-	:-	: 94	:-	:-	151
C-HGF9W:	101	:-	:-	: 526	: 22	:-	: 383	: 19	: 138	:-	:-	1189
:	163	:-	: 150	: 378	: 71	: 21	:-	: 170	: 87	:-	:-	1040
9P:	-	:-	:-	:-	:-	: 17	: 15	: 73	:-	:-	:-	105
8W:	-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8M:	2	:-	: 4	: 3	: 7	: 23	: 14	: 4	:-	:-	:-	57
8P:	-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
CO9W:	-	:-	:-	:-	:-	:-	:-	:-	:-	: 64	:-	64
9M:	-	:-	:-	:-	:-	:-	:-	:-	:-	: 48	:-	48
9P:	-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8W:	-	:-	:-	:-	:-	:-	:-	:-	:-	:-	:-	-
8M:	-	:-	:-	:-	:-	:-	:-	:-	:-	: 34	:-	34
8P:	-	:-	:-	:-	:-	:-	:-	:-	:-	: 4	:-	4
TOTAL	: 4168	: 3943	: 139039	: 23142	: 34021	: 19270	: 2640	: 2331	: 7009	: 235	: 235798	

* Less than 500 cubic feet

TABLE 7

NET PARTIAL CUBIC VOLUME IN SAWTIMBER TREES ON
UNRESERVED LAND WITHIN THE KOOTENAI WORKING CIRCLE

OTHER PRIVATE LAND

STRATA	W. PINE	P. PINE	LP PINE	LARCH	D. FIR	G. FIR A. FIR	HEM	CEDAR	SPRUCE	COT	TOTAL
CUBIC FEET IN THOUSANDS											
W9W:	195	4	3	32	35	13	29	19	42	12	384
9M:	169		11	103	26	54	45	54	53		515
9P:	7		1	4	1	2	2	2	1		20
8W:											
8M:											
8P:											
P9W:	15	315	20	75	252	7		5			689
9M:	209	4151	265	992	3331	92		66			9106
9P:		2478		395	3088						5961
8W:		140			35						175
8M:		932			186						1118
8P:		409			102						511
LP9W:			147	27	31	14			47		266
9M:			63	12	13	6			20		114
9P:			43			6					49
8W:	23		722	1371	451	107			139		2813
8M:			768	237		81			45		1131
8P:											
LA-DF9W:	272		1721	10562	5686	831			1351		20423
9M:	2782	2237	2837	17212	15193	1064	191	1282	2727		45525
9P:	389	6257	2724	11915	9130	479	1557	359			32810
8W:		206	957	226	59	39			64		1561
8M:			3728	1335	298			95			5456
8P:			2615	920	267						3802
S-AF9W:	28		177	60		144	7	5	794		1215
9M:	6		199	135	31	252	13	39	450		1125
9P:				561		660		52	684		1957
8W:									36		36
8M:									49		49
8P:									85		85
C-HGF9W:				36		116	687	171		28	1038
9M:	99		112	393	154	59	67	381	108		1373
9P:	76				38	72	98	88		30	402
8W:	14		5	17	9	23	20	4			92
8M:	6			2	8	13	6	4	1		40
8P:											
CO9W:										19	19
9M:										82	82
9P:										92	92
8W:											
8M:											
8P:											
TOTAL	4290	17129	17128	46622	38424	4134	2722	2626	6696	263	140034

TABLE 7 A

NET PARTIAL CUBIC VOLUME IN POLE TREES ON UNRESERVED
LAND WITHIN THE KOOTENAI WORKING CIRCLE BY STRATA AND SPECIES

OTHER PRIVATE LAND

STRATA	W. PINE	P. PINE	LP PINE	LARCH	D. FIR	G. FIR	FIR	HEM	CEDAR	SPRUCE	COT	TOTAL
M CUBIC FEET												
W9W:	3	:-	1	2	*	13	2	3	1	-	-	25
9M:	31	:-	1	7	10	28	22	32	14	-	-	145
9P:	1	:-	*	*	*	1	1	1	*	-	-	4
8W:	-	:-	-	-	-	-	-	-	-	-	-	-
8M:	-	:-	-	-	-	-	-	-	-	-	-	-
8P:	-	:-	-	-	-	-	-	-	-	-	-	-
P9W:	4	3	75	16	57	10	-	-	-	-	-	165
9M:	51	46	1012	214	758	122	-	-	-	-	-	2203
9P:	-	341	-	-	341	-	-	-	-	-	-	682
8W:	-	234	-	-	59	-	-	-	-	-	-	293
8M:	-	932	-	-	233	-	-	-	-	-	-	1165
8P:	-	511	-	-	256	-	-	-	-	-	-	767
LP9W:	-	-	52	6	-	30	-	-	33	-	-	121
9M:	-	-	22	3	-	13	-	-	14	-	-	52
9P:	-	-	34	-	-	71	-	-	4	-	-	109
8W:	-	56	7834	567	274	349	-	-	190	28	-	9298
8M:	-	-	2198	-	36	322	-	-	-	-	-	2556
8P:	-	-	76	-	-	-	-	-	-	-	-	76
LA-DF9W:	-	-	6750	-	755	921	-	-	-	-	-	8426
9M:	871	109	14132	3049	4602	3267	708	380	1688	-	-	28806
9P:	-	1377	11436	3053	2994	778	-	419	-	-	-	20057
8W:	137	167	6574	2033	492	270	-	206	157	-	-	10036
8M:	-	-	7505	2858	953	36	-	-	-	-	-	11352
8P:	-	-	2668	2161	800	27	-	-	-	-	-	5656
S-AF9W:	-	-	-	-	-	52	3	-	18	-	-	73
9M:	22	-	112	9	-	49	-	40	119	-	-	351
9P:	-	-	47	41	-	203	-	24	198	-	-	513
8W:	-	-	-	-	-	17	-	-	34	-	-	51
8M:	-	-	-	-	-	22	-	-	44	-	-	66
8P:	-	-	-	-	-	93	-	-	153	-	-	246
C-HCF9W:	39	-	-	204	9	-	148	7	53	-	-	460
9M:	73	-	67	168	32	9	-	76	38	-	-	463
9P:	-	-	-	-	-	4	3	18	-	-	-	25
8W:	5	-	8	7	17	53	33	9	-	-	-	132
8M:	*	-	5	-	3	13	5	2	1	-	-	29
8P:	-	-	-	-	-	-	-	-	-	-	-	-
CO9W:	-	-	-	-	-	-	-	-	-	-	12	12
9M:	-	-	-	-	-	-	-	-	-	-	80	80
9P:	-	-	-	-	-	-	-	-	-	-	179	179
8W:	-	-	-	-	-	-	-	-	-	-	44	44
8M:	-	-	-	-	-	-	-	-	-	-	19	19
8P:	-	-	-	-	-	-	-	-	-	-	9	9
TOTAL	1237	3776	60609	14398	12681	6773	925	1217	2759	371	104746	

* Less than 500 cubic feet

TABLE 8.

INDICATED ALLOWABLE ANNUAL CUT OF SAWTIMBER FROM HARVEST CUTTINGS
NATIONAL FOREST LAND

Kemp Formula

$$AC = \frac{(7A_m + 5A_p + 3A_s + A_n) V_m}{4R}$$

AC = Allowable annual cut

 A_m = Area of sawtimber stands A_p = Area of pole stands A_s = Area of seedling and sapling stands A_n = Area to be restocked with next 10 years 4 = Number of stand size classes R = Rotation in years V_m = Average volume per acre of sawtimber stands (" A_m " stratum)

<u>Types</u>	Annual Volume		Allow. Cut
	<u>Cutting</u> <u>Area</u> <u>Acres</u>	<u>"A"</u> <u>Stratum</u> <u>Bd. Ft.</u>	
W.Pine Type			
AC =	$\frac{(7(25008) + 5(3775) + 3(1326) + 63) 20,038}{4(120)}$	$= 412.5 \times 20,038$	$= 8,266$
P.Pine Type			
AC =	$\frac{(7(158727) + 5(11571) + 3(2201) + 2000) 6634}{4(140)}$	$= 2102.6 \times 6,634$	$= 13,948$
LP.Pine Type - (1/2 total area productive of sawtimber)			
AC =	$\frac{(7(26,804) + 5(84873) + 3(43599) + 100) 8834}{4(100)}$	$= 1857.3 \times 8,834$	$= 16,407$
La-DF Type			
AC =	$\frac{(7(700003) + 5(188240) + 3(32662) + 2000) 8172}{4(140)}$	$= 10605.3 \times 8,172$	$= 86,664$
Sp-AF Type			
AC =	$\frac{(7(191412) + 5(19425) + 3(11476) + 6000) 12629}{4(130)}$	$= 2848.6 \times 12,629$	$= 35,975$
C-H-GF Type			
AC =	$\frac{(7(25523) + 5(317) + 3(124) + 0) 7081}{4(120)}$	$= 376.7 \times 7,081$	$= 2,667$
Cott Type			
AC =	$\frac{(7(981) + 5(264) + 0 + 0) 7385}{4(120)}$	$= 17.0 \times 7,385$	$= 126$
TOTALS	18,220 Acres		164,053 M bd.ft.

TABLE 8 (Cont.)

Calculation of Annual Cutting Area from Harvest Cuttings
after Kemp Formula
- National Forest Lands -

Type (Rotation) Size Class	Multipliers	Comm. Area Acres	Cutting Area Acres
<u>W. Pine (120)</u>			
Sawtimber Stands	.0146	25,008	365.1
Pole stands	.0103	3,775	38.9
Seed & Sapling stands	.0063	1,327	8.4
Restocking	.0021	63	.1
Total		30,173	412.5
<u>P. Pine (140)</u>			
Sawtimber stands	.0125	158,727	1984.1
Pole stands	.0089	11,571	103.0
Seed & Sapling stands	.0054	2,201	11.9
Restocking	.0018	2,000	3.6
Total		174,499	2102.6
<u>Lp. Pine (100) (Sawtimber producing acreage)</u>			
Sawtimber stands	.0175	26,804	469.1
Pole stands	.0125	84,873	1060.9
Seed & Sapling stands	.0073	43,599	327.0
Restocking	.0025	100	.3
Total		155,376	1857.3
<u>Lp. Pine (100) (Pole producing acreage)</u>			
Pole stands	.0167	111,677	1865.0
Seed & Sapling stands	.0100	43,599	436.0
Restocking	.0033	400	1.3
Total		155,676	2302.3
<u>La-D.Fir (140)</u>			
Sawtimber stands	.0125	700,003	8750.0
Pole stands	.0089	188,240	1675.3
Seed & Sapling stands	.0054	32,662	176.4
Restocking	.0018	2,000	3.6
Total		922,905	10605.3
<u>Sp-A.Fir (130)</u>			
Sawtimber stands	.0135	191,412	2584.1
Pole stands	.0096	19,425	186.5
Seed & Sapling stands	.0058	11,476	66.6
Restocking	.0019	6,000	11.4
Total		228,313	2848.6
<u>C-H-GF (120)</u>			
Sawtimber Stands	.0146	25,523	372.6
Pole stands	.0103	317	3.3
Seed & Sapling stands	.0063	124	.8
Restocking stands	.0021	0	0
Total		25,964	376.7
<u>Cott (120)</u>			
Sawtimber stands	.0146	981	14.3
Pole stands	.0103	264	2.7
Seed & Sapling stands	.0063	0	0
Restocking	.0021	0	0
Total		1245	17.0

TABLE 8 (Cont.)

COMPUTATION OF ALLOWABLE ANNUAL CUT IN SAWTIMBER FROM HARVEST CUTTINGS

- National Forest Lands -

Von Mantel Formula

$$AC = \frac{2 \text{ Ga}}{R}$$

AC = Allowable Annual Cut

Ga = Volume of actual growing stock

R = Rotation age (average for all types)

All TypesSawtimber

$$AC = 2 \times \frac{10,978}{134} = 163.5 \text{ MM bd. ft.}$$

Austrian Formula

$$AC = \frac{Ga - Gr + I}{R}$$

AC = Allowable annual cut

I = Increment (periodic annual)

Ga = Volume of actual growing stock

Gr = Volume of desirable growing stock

R = Rotation age (average all types)

SawtimberMM bd.ft.

$$AC = (10,978 - 6,646) + 101.5 \text{ (ave. 10 yr. past growth)} = 133.8$$

or

or

$$139.0 \text{ (spruce growth assumed=0)} = 171.3$$

or

or

$$133.8 \text{ (M.A.I. adjusted for stocking)} = 165.3$$

Hanzlik FormulaLegend

$$AC = \frac{Vom + I}{R}$$

Vom = Volume overmature

$$AC = \frac{10978 (.45)}{134} + 121.4 = 158.3 \text{ MM b.f.}$$

R = Rotation age (average)

I = Mean annual increment

1/M.A.I. from inventory data appendix table 24.

TABLE 8A

INDICATED ALLOWABLE ANNUAL CUT OF OTHER PRODUCTS FROM HARVESTCUTTINGS
NATIONAL FOREST LANDAfter Kemp Formula

<u>Sawtimber Producing Forest Types</u>	<u>Annual Cutting Area (Acres)</u>	<u>Volume Per Acre (Cu.Ft.)</u>		<u>Total Annual Allowable Cut Other Products M Cu.Ft.</u>	<u>Cords</u>
<u>W. Pine</u>	412.5 x	679	=	280	3,111
<u>P. Pine</u>	2,102.6 x	298	=	626	6,955
<u>La.-D.Fir</u>	10,605.3 x	976	=	10,351	115,000
<u>Spr-AF</u>	2,848.6 x	585	=	1,666	18,509
<u>Ced-H-GF</u>	376.7 x	638	=	240	2,667
<u>Cott</u>	17.0 x	500	=	8	89
<u>LP Pine ($\frac{1}{2}$ Total Area)</u>	<u>1,857.3 x</u>	<u>1,306</u>	<u>=</u>	<u>2,427</u>	<u>26,966</u>
SUBTOTAL	18,220.0			15,598 or	173,297

Pole Producing
Forest Types

LP Pine ($\frac{1}{2}$ Total Area)					
AC = $\frac{5(111677) + 3(43599) + 400}{3 \times 100} \times 1633 = 2302 \times 1633 =$				<u>3,760</u>	or <u>41,774</u>
TOTALS	20,522			19,358	or 215,071

OTHER CHECK FORMULASVon Mantel

$$AC = \frac{2(1,359,053)}{134} + \frac{2(182,407)}{100} = 23,932 \text{ or } 265,885$$

Austrian

Not estimated

TABLE 8 B

KOOTENAI WORKING CIRCLE KOOTENAI NATIONAL FORESTTabular Calculation of Allowable Annual Cut
National Forest OwnershipAllowable Annual Cut of All Types 164 Million Bd. Ft.Average Rotation 134 Years

Current Age Class	Average Cutting Age	1/ Area	Periodic ^{2/} and Mean ^{3/} Annual Growth Rates	Net Volume per Acre at Average Cutting Age	Total Volume to Cut	Years to Cut		
						Each Age Class	Cumu- lative	Area Cut per Year
Years	Years	Acres	Board Feet		Millions	Years	Years	Acres
	209		No Net					
200+	205-212	279264	Growth	Pres. 8965	2503.602	15	15	18620
	209							
190	195-212	125651		Pres. 8965	1126.461	7	22	17960
	196			Gr. 3307	484.174			
170	192-200	146409	122.5	Pres. 8965	1312.557	11	33	13300
	188			Gr. 4655	497.354			
150	183-193	106843	122.5	Pres. 8965	957.838	9	42	11870
	176			Gr. 5635	562.205			
130	172-181	100835	122.5	Pres. 8965	903.986	9	51	11200
	168			Gr. 7105	976.305			
110	161-174	137411	P.A.G. 122.5	Pres. 8965	1231.890	13	64	10560
	162			Gr. 8820	1324.208			
90	154-170	150137	122.5	Pres. 8965	1345.978	16	80	9400
	161			Gr. 11147	2485.770			
70	150-172	222999	122.5	Pres. 5062	1128.821	22	102	10140
	159			Gr. 13352	1836.714			
50	152-165	137561	122.5	Pres. 2796	384.620	14	116	9830
	150			Gr. 19050	1272.806			
30	146-154	66814	127.0			8	124	8530
	137			Gr. 17399	946.279			
10	134-140	54387	127.0			6	130	9060
	125			Gr. 15875	161.338			
Restock	125-126	10163	M.A.G. 127.0			1	131	10160
TOTAL		1538474			21442.906	131		11744

(Av. Rotation) (Av. Cutting Area)

1/ Sawtimber producing acreage including one half of lodgepole pine type

2/ P.A.G. rates for sawtimber producing acreage obtained from inventory plot growth data

3/ M.A.G. rate for sawtimber types obtained from yield tables

(TABLE 8C of similar material omitted)

CALCULATION OF THE SUSTAINED CUT OF SAWTIMBER FROM HARVEST CUTTINGS
ON OTHER OWNERSHIPS

VON MANTEL FORMULA

$$AC = \frac{2Ga}{R}$$

<u>STATE</u>		<u>Annual Cut</u>	
		<u>Sawtimber</u> <u>(MM bd.ft.)</u>	<u>Other Products</u> <u>(M Cords)</u>
$AC = \frac{2 \times 273}{134}$	=	4.1	+ 4.9
<u>INDUSTRIAL PRIVATE</u>			
$AC = \frac{2 \times 1978}{134}$	=	29.5	+ 39.1
<u>OTHER PRIVATE</u>			
$AC = \frac{2 \times 661}{134}$	=	9.9	+ 17.4
		<hr/>	<hr/>
TOTAL OTHER OWNERSHIPS	=	43.5	+ 61.4

TABLE 8D

CALCULATION OF SUSTAINED ANNUAL CUT AVAILABLE FROM INTERMEDIATE CUTTINGS
NATIONAL FOREST LANDS

WELL STOCKED STRATA	COM. FOR. AREA	PORTION UNDER ROT. AGE	AREA SUBJECT TO INT. CUTS	AREA THAT MAY BE CUT ANNUALLY
Sawtimber	Acres	%	Acres	Acres
W9W	11786	23.0	2710	135
P9W	6063	40.9	2480	124
LA-DF9W	150916	44.3	66850	3342
SP-AF9W	45607	32.0	15100	755
C-H9W	17321	40.0	6940	347
LP9W	7183	10.0	718	36
POLES				
W8W	2549	100	2549	147
P8W	1107	100	1107	55
LA-DF8W	106604	95	101150	5057
SP-AF8W	5207	100	5207	260
C-H8W	142	100	142	7
LP8W	122895	85	104400	5220
TOTAL	477380		309353	15485

VOLUMES PER ACRE AVAILABLE FROM CUTTING AREAS

WELL STOCKED STRATA	VOL. PER ACRE		CUT	VOLUME TO CUT-ACRES		
Sawtimber	Sawtimber	Other	Recommended	Sawtimber	Other	Prod.
Sawtimber	M bd. ft.	Cu. ft.	%	M Bd. ft.	Cu. ft.	Cords
W9W	24.7	351	25	6.2	88	.97
P9W	10.0	495	25	2.5	124	1.38
LA-LF9W	12.6	1116	25	3.1	279	3.21
SP-AF9W	17.8	228	25	4.4	57	.63
C-H9W	6.6	700	25	1.6	175	1.94
LP9W	10.3	1021	25	2.5	255	2.83
POLES						
W8W	2.5	1157	25	.6	289	3.21
P8W	1.5	500	25	.4	125	1.39
LA-DF8W	1.5	2044	25	.4	512	5.69
SP-AF8W	2.8	845	25	.7	211	2.34
C-H8W	4.1	1319	25	1.0	330	3.67
LP8W	2.7	2000	25	.7	500	5.50

INDICATED ANNUAL CUT FROM INTERMEDIATE CUTTINGS

WELL STOCKED STRATA	AREA TO CUT ANNUALLY	VOLUMES		
Sawtimber	Acres	Sawtimber	Other Products	
		M Bd. ft.	M Cu. ft.	Cords
W9W	135	837	12.9	131
P9W	124	311	15.4	171
LA-DF9W	3342	10360	932.4	10728
SP-AF9W	755	3322	43.0	476
C-H9W	347	555	60.7	673
LP9W	36	90	9.2	102
POLES				
W8W	147	88	42.5	472
P8W	55	22	6.9	76
LA-DF8W	5057	2023	2589.2	28775
SP-AF8W	260	182	54.9	609
C-H8W	7	7	2.3	26
LP8W	5220	3654	2610.0	28710
TOTAL	15485	21451	6379.4	70949

TABLE 9

KOOTENAI WORKING CIRCLE

ALLOWABLE ANNUAL CUT BY SPECIES FROM ALL FOREST TYPES OF SAWTIMBER 11 " DBH AND OVER
BY MANAGEMENT UNIT ON UNRESERVED NATIONAL FOREST LANDS

MANAGEMENT UNIT	CUTTING AREA ACRES	SPECIES											TOTAL ALL SPECIES		
		W. PINE	P PINE	LP PINE	LARCH	M FT BM (SCRIBNER)								SPRUCE	COT
						D.FIR	A.FIR	HEMLOCK	CEDAR						
										G.FIR					
REXFORD	2384.0	614	1522	3209	5546	4205	1673	129	300	4763	9	21970			
SYLVANITE	1730.1	971	616	1992	4588	2723	1622	423	369	4086	38	17428			
KORTINE	2619.2	554	1079	3315	7178	4463	1755	195	285	4155	17	22996			
TROY	2365.7	1935	1002	2058	7067	4266	1843	1273	729	3496	157	23826			
LIBBY	2888.7	1447	2399	2785	6848	5302	1355	396	456	2538	87	23613			
FISHER RIV.	2334.7	739	2739	2293	5181	5103	635	138	265	1368	5	18466			
WARLAND	1666.5	489	2024	1603	3509	3691	469	52	198	1073	---	13108			
YAAK	2229.6	955	596	3628	6597	4050	1544	190	238	4742	30	22570			
TOTAL	18218.5	7704	11977	20883	46514	33803	10896	2796	2840	26221	343	163977			

TABLE 9 A

ALLOWABLE ANNUAL CUT BY SPECIES FROM ALL FOREST TYPES OF OTHER PRODUCTS 5" TO 10.99" DBH
BY MANAGEMENT UNITS ON UNRESERVED NATIONAL FOREST LANDS

MANAGEMENT UNIT	SPECIES										TOTAL ALL SPECIES	
	W PINE	P PINE	LP PINE	LARCH	D.FIR	A.FIR	G.FIR	HEMLOCK	CEDAR	SPRUCE		COT
	CORDS *											
REXFORD	489	289	15689	2011	2611	4089	367	478	2133	22	28178	
SYLVANITE	355	211	11378	1456	1900	2967	267	344	1544	11	20433	
FORTINE	522	311	17122	2200	2856	4467	400	522	2333	22	30755	
TROY	478	278	15567	2000	2600	4067	367	467	2121	22	27967	
LIBBY	589	344	19033	2444	3178	4966	444	578	2590	34	34200	
FISHER RIV.	478	278	15322	1966	2555	4000	355	467	2090	22	27533	
WARLAND	344	200	11022	1411	1834	2878	256	333	1500	11	19789	
YAAK	456	267	14622	1867	2444	3810	322	433	2000	34	26255	
TOTAL	3711	2178	119755	15355	19978	31244	2778	3622	16311	178	215110	

* CORDS = $\frac{\text{CU.FT.}}{90}$

TABLE 10

KOOTENAI WORKING CIRCLE
CALCULATION OF ANNUAL ALLOWABLE CUT ON UNRESERVED NATIONAL FOREST LANDS
CUTTING AREA CALCULATIONS

FOREST TYPE	BY SIZE CLASS				CUTTING AREA BY SIZE CLASS				TOTAL
	SAWLOGS	POLES	SEEDS & SAPPLINGS	NONSTOCK	SAWLOGS	POLES	SEEDS & SAPPLINGS	NON STOCK	CUTTING ACREAGE
	ACRES				ACRES				
WP 120	25008	3775	1326	63	365.1	39.3	8.2	.1	412.7
PP 140	158727	11571	2201	2000	1984.1	103.0	11.9	3.6	2102.6
LP 100	26804	84873	43599	500	469.1	1060.9	327.0	.3	1857.3
L-DF 140	700003	188240	32662	2000	8750.0	1675.3	176.4	3.6	10605.3
S-AF 130	191412	19425	11476	6000	2584.1	186.5	66.6	11.4	2848.6
C-H-GF 120	25523	317	124	-----	372.6	3.3	.8	----	376.7
CO 120	981	264	-----	-----	14.3	2.7	-----	----	17.0
	** (111677) ** (43599) * (9000)								
TOTAL	1128458	420142	134987	19563	14539.3	3071.0	590.9	19.0	18220.2

* Nonstocked Reduced by Area for Which There is no Planting Plans

** LP Pine Area Adjusted by Amount Shown

FOREST TYPE	AVERAGE ACRE VOLUME FOR SAWTIMBER IN SAWTIMBER STANDS										AVERAGE	
	SPECIES										ALL	
	W.P.	P.P.	LP. P.	LARCH	D. FIR	A.FIR	G. FIR	HEM	CEDAR	SPR.	COT	SPECIES
	M FT BM (SCRIBNER)											
WP	8.869	.131	.285	2.725	1.472		1.201	1.495	1.229	2.249	.382	20.038
PP	.120	3.187	.145	.656	2.449		.048	-----	.029	-----	-----	6.634
LP P	-----	-----	5.159	.811	.881		.522	-----	-----	1.461	-----	8.834
L-DF	.312	.495	.573	3.513	2.441		.211	.070	.106	.451	-----	8.172
S-AF	.127	-----	1.669	1.742	.147		2.399	.078	.232	6.232	-----	12.626
C-H-GF	.269	-----	.169	.802	.289		.707	3.233	1.259	.178	.175	7.081
CO											7.385	7.385

KOOTENAI WORKING CIRCLE
ALLOWABLE ANNUAL CUT—SAWTIMBER 11.0+ DBH— AND OVER — NATIONAL FOREST LANDS

TYPE	SPECIES										TOTAL BY TYPE
	W.P.	P.P.	LP.P	LARCH	D. FIR	A. FIR G. FIR	HEMLOCK	CEDAR	SPRUCE	COT	
	M FT BM (SCRIBNER)										
WP	3660	54	118	1125	607	496	617	507	928	157	8269
PP	252	6701	305	1379	5149	101	----	61	----	----	13948
LP P	----	----	9582	1506	1636	969	----	----	2714	----	16407
L-DF	3308	5249	6077	37257	25888	2238	742	1124	4783	----	86666
S-AF	362	----	4754	4962	419	6834	222	661	17752	----	35966
C-H-GF	101	----	64	302	109	266	1218	474	67	66	2667
CO	----	----	----	----	----	----	----	----	----	126	126
TOTAL	7683	12004	20900	46531	33808	10904	2799	2827	26244	349	164049

TABLE 10 A

KOOTENAI WORKING CIRCLE
CALCULATION OF ALLOWABLE CUT OF OTHER PRODUCTS
FROM UNRESERVED NATIONAL FOREST LAND

NET PARTIAL CUBIC VOLUME OF POLE TREES IN SAWTIMBER STANDS

		SPECIES									
FOREST TYPE	AREA IN ACRES	W. P.	P. P.	LP. P	LARCH	D. FIR	G. FIR A. FIR	HEM	CEDAR	SPRUCE	TOTAL
VOLUME - CUBIC FEET IN THOUSANDS											
WP	25008	3290	---	190	873	925	4698	2322	3294	1383	16975
PP	158727	990	3203	19615	4143	17018	2377	----	----	-----	47346
LP P	26804	----	-----	13444	1030	-----	14486	----	----	6058	35018
L-DF	700003	12119	9351	396557	59795	96132	68289	9847	7687	23481	683258
S-AF	191412	4349	----	25209	4356	-----	29717	365	9474	38773	112243
C-H-G	25523	1645	----	571	6775	498	111	3907	979	1733	16219
CO	981	----	-----	-----	-----	-----	-----	-----	-----	-----	-----

AVERAGE ACRE VOLUME OF POLE TREES IN SAWTIMBER STANDS AND POLE PRODUCING LP AREA

SPECIES										
FOREST W. PINE TYPE	P. P.	LP. P.	LARCH	D. FIR	A. FIR G. FIR	HEM	CEDAR	SPRUCE	COT	TYPE AVERAGE
CUBIC FEET										
WP 132	—	8	35	37	187	93	132	55	—	679
PP 6	20	124	26	107	15	—	—	—	—	298
LP P —	—	502	38	—	540	—	—	226	—	1306
L-D-F 17	13	567	85	137	98	14	11	34	—	976
S-AF 22	—	132	23	—	155	2	49	203	—	586
C-H-GF 64	—	22	265	20	4	154	38	68	—	635
CO —	—	—	—	—	—	—	—	—	500	500
LP8 —	7	1383	76	42	95	—	—	26	4	1633

ANNUAL ALLOWABLE CUT OTHER PRODUCTS (5.0" to 10.99" d.b.h.)
FROM POLE TREES IN SAWTIMBER STANDS AND LP POLE PRODUCING AREA

SPECIES											
FOREST TYPE	W. P.	P. P.	LP P.	LARCH	D. FIR	A. FIR G. FIR	HEM	CEDAR	SPR.	COT	TYPE TOTAL
M CUBIC FEET											
WP	55	---	3	14	15	77	38	55	23	---	280
PP	12	42	261	55	225	32	---	---	---	---	627
LP P	---	---	934	70	---	1003	---	---	420	---	2427
L-DF	180	138	6013	902	1453	1039	148	117	361	---	10351
S-AF	63	---	375	66	---	441	6	140	578	---	1669
C-H-GF	24	---	8	100	8	1	58	14	26	---	239
CO	---	---	---	---	---	---	---	---	---	7	7
TOTAL	334	180	7594	1207	1701	2593	250	326	1408	7	15600
LP 8		16	3184	175	97	219	---	---	60	9	3760
TOTAL	334	196	10778	1382	1798	2812	250	326	1468	16	19360

TABLE 11

KOOTENAI WORKING CIRCLE - REXFORD BLOCKCALCULATION OF ANNUAL ALLOWABLE CUT QUOTA
ON UNRESERVED NATIONAL FOREST LANDSCUTTING AREA CALCULATIONS

FOREST TYPE	AREA BY SIZE CLASS				CUTTING AREA BY SIZE CLASS				TOTAL CUTTING AREA
	SAWLOGS	POLES	SEED. & SAP.	NONSTOCK	SAWLOGS	POLES	SEED. & SAP.	NON STOCK	
	ACRES				ACRES				
W.Pine	395	-----	-----	-----	5.7	-----	-----	-----	5.7
P.Pine	23749	209	-----	322	296.9	1.9	-----	.5	299.3
LP.Pine	1427	16699	5233	80	25.0	208.7	39.2	.2	273.1
LA-D.Fir	89054	16529	1335	322	1113.2	147.1	7.2	.5	1268.0
S-A.Fir	38157	1945	104	976	515.1	18.7	.6	1.8	536.2
C-H-GF	58	-----	-----	-----	.8	-----	-----	-----	.8
CO	61	-----	-----	-----	.9	-----	-----	-----	.9
Area Adj.		(18125)	(5232)	(1452)					
TOTAL	152901	53507	11904	3152	1957.6	376.4	47.0	3.0	2384.0

AVERAGE ACRE VOLUME

FOREST	AVERAGE ACRE VOLUME FOR SAWTIMBER IN SAWTIMBER STANDS										TOTAL AV.
	SPECIES										VOLUME
TYPE	W.PINE	P.PINE	LP PINE	LARCH	D.FIR	G&A.FIR	HEM	CED	SPR	COT	
	M FT BM (SCRIBNER)										
WP	5.815	-----	.354	3.433	.833	1.658	1.339	1.461	1.797	---	16.491
PP	.111	3.053	.135	.623	2.377	.044	-----	.027	-----	---	6.370
LP P	-----	-----	5.420	.980	1.064	.521	-----	-----	1.762	---	9.747
L-DF	.365	.479	.537	3.328	2.457	.195	.059	.129	.457	---	8.006
S-AF	.158	-----	1.878	1.583	.151	2.353	.087	.222	6.886	---	13.318
C-H-GF	.621	-----	.672	2.448	.931	.345	.379	1.931	.707	---	8.034
CO	-----	-----	-----	-----	-----	-----	-----	-----	-----	10.000	10.000

ALLOWABLE ANNUAL CUT - SAWTIMBER 11.0" DBH AND OVER FROM
UNRESERVED NATIONAL FOREST LANDS REXFORD BLOCK

FOREST TYPE	SPECIES										TOTAL VOLUME BY TYPE
	W.PINE	P.PINE	LP. PINE	LARCH	D.FIR	A.FIR G.FIR	HEM	CEDAR	SPR	COT	
	M FT BM (SCRIBNER)										
WP	33	-----	2	20	5	9	7	8	10	---	94
PP	33	915	40	186	711	13	---	8	-----	---	1906
LP P	---	-----	1480	268	291	142	---	---	481	---	2662
L-DF	463	607	681	4221	3116	247	75	163	579	---	10152
S-AF	85	-----	1006	849	81	1262	47	119	3692	---	7141
C-H-GF	*	-----	*	2	1	*	*	2	1	---	6
CO	-----	-----	-----	-----	-----	-----	-----	-----	-----	9	9
TOTAL	614	1522	3209	5546	4205	1673	129	300	4763	9	21970

*Less than 500 Bd. ft.

TABLE 12

KOOTENAI WORKING CIRCLE - SYLVANITE BLOCK

CALCULATION OF ANNUAL ALLOWABLE CUT
ON UNRESERVED NATIONAL FOREST LANDS
CUTTING AREA CALCULATIONS

FOREST TYPES	AREA BY SIZE CLASS			CUTTING AREA BY SIZE CLASS					TOTAL CUTTING AREA
	SAWLOGS	POLES	SEEDS & SAPLING	NONSTOCK	SAWLOGS	POLES	SEEDS & SAPLINGS	NONSTOCK	
	ACRES				ACRES				
W. Pine	3372	1313	-----	7	49.2	13.5	-----	---	62.7
P. Pine	4215	159	25	229	52.7	1.4	.1	.4	54.6
LP Pine	718	3920	4682	55	12.6	49.0	35.1	.1	96.8
L-D. Fir	47065	33235	9010	228	588.3	295.8	48.7	.4	933.2
S-AF	31924	4281	8017	687	431.0	41.1	46.5	1.3	519.9
C-H-GF	4245	80	15	-----	62.0	.8	.1	---	62.9
CO	-----	-----	-----	-----	-----	-----	-----	---	-----
Area Adj.		(5437)	(4681)	(1030)					
TOTAL	91539	48425	26430	2236	1195.8	401.6	130.5	2.2	1730.1

SYLVANITE BLOCK

AVERAGE ACRE VOLUME FOR SAWTIMBER IN SAWTIMBER STANDS											
FOREST TYPE	SPECIES										AVERAGE
	W. PINE	P. PINE	LP PINE	LARCH	D. FIR	A. FIR G. FIR	HEMLOCK	CEDAR	SPRUCE	COT	
	M FT BM (SCRIBNER)										
WP	9.370	.150	.276	2.657	1.568	1.153	1.528	1.210	2.332	.435	20.679
PP	.123	3.233	.149	.667	2.475	.049	-----	.030	-----	-----	6.726
LP P	-----	-----	4.699	.517	.561	.525	-----	-----	.932	-----	7.234
L-DF	.309	.461	.598	3.693	2.506	.226	.064	.102	.478	-----	8.437
S-AF	.141	-----	1.828	1.637	.159	2.380	.086	.232	6.534	-----	12.997
C-H-GF	.252	-----	.110	.600	.225	.761	3.537	1.188	.116	.202	6.991
CO	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

ALLOWABLE ANNUAL CUT - SAWTIMBER 11.0" DBH AND OVER FROM
UNRESERVED NATIONAL FOREST LANDS SYLVANITE BLOCK

FOREST TYPE	SPECIES										TOTAL
	W. PINE	P. PINE	LP PINE	LARCH	D. FIR	A. FIR G. FIR	HEMLOCK	CEDAR	SPRUCE	COT	
	M FT BM (SCRIBNER)										
WP	588	9	17	167	98	72	96	76	147	27	1297
PP	6	177	8	36	135	3	---	2	-----	---	367
LPP	---	---	451	50	54	50	---	---	89	---	694
L-DF	288	430	558	3446	2339	211	60	95	446	---	7873
S-AF	73	---	950	851	83	1237	45	121	3397	---	6757
C-H-GF	16	---	8	38	14	49	222	75	7	11	440
CO	---	---	---	---	---	---	---	---	---	---	---
TOTAL	971	616	1992	4588	2723	1622	423	369	4086	38	17428

TABLE 13

KOOTENAI WORKING CIRCLE
FORTINE BLOCK

CALCULATION OF ANNUAL ALLOWABLE CUT ON
UNRESERVED NATIONAL FOREST LANDS

FOREST TYPE	AREA BY SIZE CLASS				CUTTING AREA BY SIZE CLASS				
	SAWLOGS	POLES	SEEDS & SAPLINGS	NON STOCK	SAWLOGS	POLES	SEEDS & SAPLINGS	NON STOCK	TOTAL CUTTING AREA
	ACRES				ACRES				
WP	27	232	-----	8	.4	2.4	-----	---	2.8
PP	970	497	107	258	12.1	4.4	.6	.5	17.6
LP P	11381	3193	10818	13	199.2	39.9	81.1	---	320.2
L-DF	121261	21657	10068	258	1515.8	192.7	54.4	.5	1763.4
S-AF	33718	5116	1043	826	455.2	49.1	6.0	1.6	511.9
C-H-GF	-----	32	-----	-----	-----	.3	-----	---	.3
CO	201	13	-----	-----	2.9	.1	-----	---	3.0
Area Adj.		(14574)	(10817)	(1163)					
TOTAL	167558	45314	32853	2526	2185.6	288.9	142.1	2.6	2619.2

FORTINE BLOCK
AVERAGE ACRE VOLUME FOR SAWTIMBER IN SAWTIMBER STANDS
SPECIES

FOREST TYPE	W.PINE	P.PINE	LP PINE	LARCH	D.FIR	A.FIR G.FIR	HEMLOCK	CEDAR	SPRUCE	COT	AVERAGE
						M FT BM (SCRIBNER)					
WP	5.614	-----	.354	3.432	.832	1.660	1.339	1.462	1.800	-----	16.493
PP	.154	3.680	.187	.782	2.699	.062	-----	.035	-----	-----	7.599
LP P	-----	-----	5.289	.894	.972	.521	-----	-----	1.612	-----	9.288
L-DF	.273	.575	.556	3.316	2.297	.193	.092	.096	.389	-----	7.787
S-AF	.105	-----	1.249	1.993	.100	2.421	.058	.217	5.759	-----	11.902
C-H-GF	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
CO	-----	-----	-----	-----	-----	-----	-----	-----	-----	5.915	5.915

ALLOWABLE ANNUAL CUT SAWTIMBER 11.0" DBH AND OVER FROM
UNRESERVED NATIONAL FOREST LANDS FORTINE BLOCK

FOREST TYPE	SPECIES										TOTAL
	W.PINE	P.PINE	LP PINE	LARCH	D.FIR	A.FIR G.FIR	HEMLOCK	CEDAR	SPRUCE	COT	
						M FT BM (SCRIBNER)					
WP	16	-----	1	10	2	5	4	4	4	---	46
PP	3	65	3	14	47	1	---	1	-----	---	134
LP P	---	-----	1692	286	311	169	---	---	516	---	2974
L-DF	481	1014	980	5848	4052	340	162	169	686	---	13732
S-AF	54	-----	639	1020	51	1240	29	111	2949	---	6093
C-H-GF	---	-----	-----	-----	-----	-----	---	---	-----	---	-----
CO										17	17
TOTAL	554	1079	3315	7178	4463	1755	195	285	4155	17	22996

TABLE 14

KOOTENAI WORKING CIRCLE
TROY BLOCK

CALCULATION OF ANNUAL ALLOWABLE CUT ON
UNRESERVED NATIONAL FOREST LAND

FOREST TYPE	AREA BY SIZE CLASS				CUTTING AREA BY SIZE CLASS				TOTAL CUTTING AREA
	SAVLOGS	POLES	SEEDS & SAPPLINGS	NON STOCK	SAVLOGS	POLES	SEEDS & SAPPLINGS	NON STOCK	
	ACRES				ACRES				
WP	8209	1909	576	3	119.9	19.7	3.6	---	143.2
PP	12354	45	25	97	154.4	.4	.1	.2	155.1
LP P	1693	3326	941	5	29.6	45.3	7.1	---	82.0
LA-DF	89920	14365	2422	97	1124.0	127.8	13.1	.2	1265.1
S-AF	30833	1928	464	310	416.2	18.5	2.7	.6	438.0
C-H-GF	19033	62	109	---	277.9	.6	.7	---	279.2
CO	215	---	---	---	3.1	---	---	---	3.1
Area Adj.		(5019)	(941)	(435)					
TOTAL	162257	26654	5478	947	2125.1	212.3	27.3	1.0	2365.7

TROY BLOCK
AVERAGE ACRE VOLUME FOR SAWTIMBER IN SAWTIMBER STANDS
SPECIES

FOREST TYPE	W PINE	P PINE	LP PINE	LARCH	D.FIR	A.FIR G.FIR	HEMLOCK	CEDAR	SPRUCE	COT	AVE. ALL SPEC.
WP	10.274	.182	.259	2.544	1.741	1.070	1.592	1.179	2.486	.528	21.855
PP	.127	3.305	.154	.685	2.515	.051	---	.031	---	---	6.868
LP P	---	---	5.145	.800	.871	.522	---	---	1.445	---	8.783
LA-DF	.274	.366	.693	4.337	2.697	.281	.052	.078	.560	---	9.338
S-AF	.076	---	1.502	1.914	.168	2.478	.074	.261	5.183	---	11.656
C-H-GF	.229	---	.148	.735	.250	.712	3.393	1.222	.155	.176	7.020
CO	---	---	---	---	---	---	---	---	---	10.233	10.233

ALLOWABLE ANNUAL CUT - SAWTIMBER 11.0" DBH AND OVER FROM
UNRESERVED NATIONAL FOREST LANDS TROY BLOCK

SPECIES											
FOREST TYPE	WPINE	P PINE	LP PINE	LARCH	D.FIR	A.FIR G.FIR	HEMLOCK	CEDAR	SPRUCE	COT	TOTAL
M FT BM (SCRIBNER)											
WP	1472	26	37	364	249	153	228	169	356	76	3130
PP	20	513	23	106	390	8	----	5	----	----	1065
LP P	----	----	422	66	71	43	----	----	118	----	720
LA-DF	346	463	877	5488	3412	355	66	99	708	----	11814
S-AF	33	----	658	838	74	1085	32	114	2271	----	5105
C-H-GF	64	----	41	205	70	199	947	342	43	49	1960
CO	----	----	----	----	----	----	----	----	----	32	32
TOTAL	1935	1002	2058	7067	4266	1843	1273	729	3496	157	23826

TABLE 15

KOOTENAI WORKING CIRCLE

LIBBY BLOCK
CALCULATION OF ANNUAL ALLOWABLE CUT
ON UNRESERVED NATIONAL FOREST LANDS

FOREST TYPE	AREA BY SIZE CLASS				CUTTING AREA BY SIZE CLASS				TOTAL CUTTING AREA
	SAWLOGS	POLES	SEEDS & SAPLINGS	NON STOCK	SAWLOGS	POLES	SEEDS & SAPLINGS	NON STOCK	
	ACRES				ACRES				
WP	9072	321	750	10	132.4	3.3	4.7	---	140.4
PP	34644	7413	1326	351	433.0	66.0	7.2	.6	506.8
LP P	125	17424	6371	85	2.2	217.8	47.8	.2	268.0
LA-DF	110931	28908	5445	351	1386.3	257.3	29.4	.6	1673.6
S-AF	18092	2559	161	1055	244.2	24.6	.9	2.0	271.7
C-H-GF	1211	50	-----	----	17.7	.5	----	---	18.2
CO	504	251	-----	----	7.4	2.6	----	---	10.0
Area									
Adj.		(17548)	(6371)	(1581)					
TOTAL	174579	74474	20424	3433	2223.2	572.1	90.0	3.4	2888.7

LIBBY BLOCK

FOREST TYPE	AVERAGE ACRE VOLUME FOR SAWTIMBER IN SAWTIMBER STANDS										
	SPECIES										
	W PINE	P PINE	LP PINE	LARCH	D.FIR	A.FIR G.FIR	HEMLOCK	CEDAR	SPRUCE	COT	AVERAGE ALL SPECIES
	M FT BM (SCRIBNER)										
WP	6.707	.053	.326	3.014	1.058	1.410	1.348	1.311	1.887	.154	17.268
PP	.086	2.689	.104	.529	2.196	.034	-----	.021	-----	-----	5.659
LP P	-----	-----	5.248	.872	.944	.520	-----	-----	1.568	-----	9.152
LA-DF	.260	.615	.541	3.188	2.227	.182	.101	.093	.359	-----	7.566
S-AF	.047	-----	1.351	2.041	.171	2.522	.069	.274	4.570	-----	11.045
C-H-GF	.819	-----	.463	1.731	.831	.633	1.026	1.766	.486	.164	7.919
CO	-----	-----	-----	-----	-----	-----	-----	-----	-----	6.361	6.361

ALLOWABLE ANNUAL CUT - SAWTIMBER 11.0" DBH AND OVER FROM
UNRESERVED NATIONAL FOREST LANDS LIBBY BLOCK

FOREST TYPE	SPECIES										TOTAL
	W PINE	P PINE	LP PINE	LARCH	D.FIR	A.FIR G.FIR	HEMLOCK	CEDAR	SPRUCE	COT	
	M FT BM (SCRIBNER)										
WP	940	7	46	423	148	198	189	184	265	21	2421
PP	44	1363	53	268	1113	17	---	10	----	---	2868
LP P	----	----	1406	234	253	139	---	---	421	---	2453
LA-DF	435	1029	905	5336	3727	304	169	156	601	---	12662
S-AF	13	----	367	555	46	685	19	74	1242	---	3001
C-H-GF	15	----	8	32	15	12	19	32	9	2	144
CO	----	----	----	----	----	----	---	---	----	64	64
TOTAL	1447	2399	2785	6848	5302	1355	396	456	2538	87	23613

TABLE 16

KOOTENAI WORKING CIRCLE
FISHER RIVER BLOCK

CALCULATION OF ANNUAL ALLOWABLE CUT
ON UNRESERVED NATIONAL FOREST LANDS

FOREST TYPE	AREA BY SIZE CLASS				CUTTING AREA BY SIZE CLASS				TOTAL CUTTING AREA
	SAWLOGS	POLES	SEEDS & SAPLINGS	NON STOCK	SAWLOGS	POLES	SEEDS & SAPLINGS	NON STOCK	
	ACRES				ACRES				
WP	1221	-----	-----	14	17.8	-----	-----	---	17.8
PP	45156	2334	394	467	564.5	20.8	2.1	.8	588.2
LP P	881	18114	2834	115	15.4	226.4	21.3	.3	263.4
LA-DF	90613	26997	1514	467	1132.7	240.3	8.2	.8	1382.0
S-AF	5016	456	92	1401	67.7	4.4	.5	2.7	75.3
C-H-GF	545	-----	-----	-----	8.0	-----	-----	---	8.0
CO	-----	-----	-----	-----	-----	-----	-----	---	-----
Area									
Adj.	(18995) (2833) (2101)								
TOTAL	143432	66896	7667	4565	1806.1	491.9	32.1	4.6	2334.7

FISHER RIVER BLOCK

AVERAGE ACRE VOLUME FOR SAWTIMBER IN SAWTIMBER STAND											
FOREST TYPE	SPECIES										AVERAGE ALL SPECIES
	W PINE	P PINE	LP PINE	LARCH	D.FIR	A.FIR G.FIR	HEMLOCK	CEDAR	SPRUCE	COT	
	M FT BM (SCRIBNER)										
WP	7.699	.085	.309	2.962	1.243	1.358	1.436	1.307	2.082	.247	18.728
PP	.138	3.459	.167	.725	2.592	.055	-----	.034	-----	-----	7.170
LP P	-----	-----	5.077	.759	.824	.522	-----	-----	1.367	-----	8.549
LA-DF	.371	.508	.512	3.154	2.400	.180	.063	.135	.433	-----	7.756
S-AF	.062	-----	1.876	1.748	.241	2.514	.095	.301	4.926	-----	11.763
C-H-GF	.328	-----	.354	1.431	.492	.541	2.273	1.484	.370	.092	7.365
COT	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

FISHER RIVER BLOCK
ANNUAL ALLOWABLE CUT SAWTIMBER 11.0" DBH AND OVER
FROM UNRESERVED NATIONAL FOREST LANDS

FOREST TYPE	SPECIES										TOTAL
	W PINE	P PINE	LP PINE	LARCH	D.FIR	A.FIR G.FIR	HEMLOCK	CEDAR	SPRUCE	COT	
	M FT BM (SCRIBNER)										
WP	137	2	6	53	22	24	26	23	36	4	333
PP	81	2035	98	426	1525	32	---	20	----	--	4217
LP P	---	----	1337	200	217	137	---	---	361	---	2252
LA-DF	513	702	708	4359	3317	249	87	187	597	---	10719
S-AF	5	----	141	132	18	189	7	23	371	---	886
C-H-GF	3	----	3	11	4	4	18	12	3	1	59
COT	---	----	----	----	----	----	----	----	----	---	----
TOTAL	739	2739	2293	5181	5103	635	138	265	1368	5	18466

TABLE 17

KOOTENAI WORKING CIRCLE
WARLAND BLOCK

CALCULATION OF ANNUAL ALLOWABLE CUT
ON UNRESERVED NATIONAL FOREST LANDS

FOREST TYPE	AREA BY SIZE CLASS				CUTTING AREA BY SIZE CLASS				TOTAL CUTTING ACREAGE
	SAWLOGS	POLES	SEEDS & SAPLINGS	NON STOCK	SAWLOGS	POLES	SEEDS & SAPLINGS	NON STOCK	
	ACRES				ACRES				
WP	192	-----	-----	3	2.8	-----	-----	-----	2.8
PP	37552	914	324	99	469.4	8.1	1.7	.2	479.4
LP P	-----	12899	2946	5	-----	161.2	22.1	-----	183.3
LA-DF	57990	21858	1093	99	724.9	194.5	5.9	.2	925.5
S-AF	3903	1545	162	319	52.7	14.8	.9	.6	69.0
C-H-GF	366	93	-----	-----	5.3	1.2	-----	-----	6.5
COT	-----	-----	-----	-----	-----	-----	-----	-----	-----
Area									
Adj.		(12899)	(2946)	(444)					
TOTAL	100003	50208	7471	969	1255.1	379.8	30.6	1.0	1666.5

WARLAND BLOCK

FOREST TYPE	AVERAGE ACRE VOLUME FOR SAWTIMBER IN SAWTIMBER STANDS										AVERAGE ALL SPECIES
	SPECIES										
	W PINE	P PINE	LP PINE	LARCH	D.FIR	A.FIR G.FIR	HEMLOCK	CEDAR	SPRUCE	COT	
	M FT BM (SCRIBNER)										
WP	5.615	-----	.354	3.432	.833	1.661	1.339	1.464	1.797	---	16.495
PP	.131	3.343	.159	.697	2.526	.052	-----	.032	-----	--	6.940
LP P	-----	-----	5.091	.854	.848	.559	-----	-----	1.432	---	8.784
LA-DF	.432	.455	.493	3.108	2.485	.177	.043	.158	.469	---	7.820
S-AF	.081	-----	1.928	1.688	.231	2.484	.097	.290	5.320	---	12.119
C-H-GF	.617	-----	.667	2.462	.923	.345	.374	1.918	.697	---	8.003
COT	-----	-----	-----	-----	-----	-----	-----	-----	-----	---	-----

ALLOWABLE ANNUAL CUT - SAWTIMBER 11.0" DBH AND OVER
FROM UNRESERVED NATIONAL FOREST LANDS WARLAND BLOCK

FOREST TYPE	SPECIES										TOTAL
	W PINE	P PINE	LP PINE	LARCH	D.FIR	A.FIR G.FIR	HEMLOCK	CEDAR	SPRUCE	COT	
	M FT BM (SCRIBNER)										
WP	16	---	1	10	2	5	3	4	5	--	46
PP	63	1603	76	334	1211	25	---	15	----	---	3327
LP P	---	---	933	157	156	102	---	---	262	---	1610
LA-DF	400	421	456	2876	2300	164	40	146	434	----	7237
S-AF	6	----	133	116	16	171	7	20	367	--	836
C-H-GF	4	----	4	16	6	2	2	13	5	---	52
COT	---	----	----	----	----	----	---	----	----	---	----
TOTAL	489	2024	1603	3509	3691	469	52	198	1073	---	13108

TABLE 18

KOOTENAI WORKING CIRCLE
YAAK BLOCK
CALCULATION OF ANNUAL ALLOWABLE CUT
FROM UNRESERVED NATIONAL FOREST LANDS

FOREST TYPE	AREA BY SIZE CLASS				CUTTING AREA BY SIZE CLASS				TOTAL CUTTING AREA
	SAWLOGS	POLES	SEEDS & SAPLINGS	NON STOCK	SAWLOGS	POLES	SEEDS & SAPLINGS	NON STOCK	
	ACRES				ACRES				
WP	2520	-----	-----	5	36.8	-----	-----	---	36.8
PP	87	-----	-----	178	1.1	-----	-----	.3	1.4
LP P	10579	8900	9776	45	185.1	111.3	73.3	.1	369.8
LA-DF	93169	24691	1775	178	1164.6	219.7	9.6	.3	1394.2
S-AF	29769	1595	1433	532	401.9	15.3	8.3	1.0	426.5
C-H-GF	65	-----	-----	-----	.9	-----	-----	---	.9
COT	-----	-----	-----	-----	-----	-----	-----	---	-----
Area Adj.		(19478)	(9776)	(797)					
TOTAL	136189	54664	22760	1735	1790.4	345.3	91.2	1.7	2229.6

YAAK BLOCK

FOREST TYPE	AVERAGE ACRE VOLUME FOR SAWTIMBER IN SAWTIMBER STANDS										AVERAGE ALL SPECIES
	SPECIES										
	WPINE	PPINE	LP PINE	LARCH	D.FIR	A.FIR G.FIR	HEMLOCK	CEDAR	SPRUCE	COT	
	M FT BM (SCRIBNER)										
WP	12.758	.279	.208	2.079	2.225	.760	1.729	1.031	2.855	.810	24.734
PP	.195	4.242	.230	.920	2.977	.080	-----	.046	-----	-----	8.690
LP P	-----	-----	5.022	.724	.786	.523	-----	-----	1.304	-----	8.359
LA-DF	.283	.416	.652	4.048	2.599	.256	.060	.087	.518	-----	8.919
S-AF	.214	-----	2.002	1.423	.118	2.263	.089	.184	8.048	-----	14.341
C-H-GF	-----	-----	-----	.261	-----	.769	4.431	.985	-----	.200	6.646
COT	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

ANNUAL ALLOWABLE CUT SAWTIMBER 11.0" DBH AND OVER
FROM UNRESERVED NATIONAL FOREST LANDS YAAK BLOCK

FOREST TYPE	SPECIES										TYPE TOTAL
	WPINE	PPINE	LP PINE	LARCH	D.FIR	A.FIR	HEMLOCK	CEDAR	SPRUCE	COT	
						G.FIR					
						M FT BM (SCRIBNER)					
WP	469	10	8	76	82	28	64	38	105	30	910
PP	*	6	*	2	4	*	---	*	---	---	12
LP P	---	---	1857	268	291	193	---	---	482	---	3091
LA-DF	395	580	909	5644	3623	357	84	121	722	---	12435
S-AF	91	---	854	607	50	965	38	78	3433	---	6116
C-H-GF	---	---	---	*	---	1	4	1	---	*	6
COT	---	---	---	---	---	---	---	---	---	---	---
TOTAL	955	596	3628	6597	4050	1544	190	238	4742	30	22570

* Less than 500 ft. B.M.

TABLE 19

KOOTENAI WORKING CIRCLE

NORMAL AND ACTUAL MEAN ANNUAL INCREMENT 2/

AND DESIRABLE GROWING STOCK

NATIONAL FOREST

FOREST TYPE	AVE. SITE	COMMERCIAL FOREST AREA	NORMAL MAI 1/NET			STOCKING CLASSES	COMM. FOREST AREA STOCKED	NET ACTUAL MAI	
			PER ACRE	TOTAL GROSS	DESIRABLE GROWING STOCK R MAI x 4x.70			TOTAL STOCKED AREA	PER ACRE TOTAL
		ACRES	BD.FT.	M BDFT.			ACRES	BD.FT.	M BD.FT.
W PINE	II-III					W(.70+)	15466	252	3897
(120)	(MID)	30172	395	11918	250278	M(.55)	13443	198	2662
						P(.25)	1200	90	108
						NS(.05)	63	18	1
							30172	(221)	6668
						W	7321	140	1025
P PINE	IV	178499	210	37485	918383	M	97574	110	10733
(140)	MINUS					P	67604	50	3380
	20%					NS	6000	10	60
							178499	(85)	15198
						W	277491	108	29969
LA-DF	III-IV	927905	170	157744	3864728	M	451563	85	38383
(140)	(MID)					P	191851	39	7482
						NS	7000	8	56
							927905	(82)	75890
						W	51946	147	7636
S-AF	III-IV	228313	233	53197	1191613	M	101548	116	11780
(130)	(MID)					P	68819	53	3647
						NS	6000	11	60
							228313	(101)	23123
						W	17518	133	2329
C-H-GF	III-IV	25964	223	5790	121590	M	6718	105	705
(120)	(MID)					P	1728	48	83
						NS	-----	10	-----
							25964	(120)	3117
						W	96574	72	6953
LP PINE	II-III	155376	110	17091	299093	M	42066	57	2398
(100)						P	16636	26	433
						NS	100	6	1
							155376	(63)	9785
		1546229	(183)	283225	6645685		1546229	(86)	133781

1/ MAI Growth Data from Tables of Yield and Mean Annual Increment of Fully Stocked Stands in Major Forest Types in Region One 1957

2/ Excludes one half of the Lodgepole Pine Type, or That Portion Which will not produce sawtimber

TABLE 19A

KOOTENAI WORKING CIRCLE
PERIODIC ANNUAL INCREMENT CALCULATION BY TYPES
NATIONAL FOREST

FOREST TYPE	AVE. SITE	SIZE & STOCKING	COMM. 1/ FOREST AREA	GROWING PORTION	GROWING COMM. FOREST	NET PAI PER 2/ ACRE	NET PAI TOTAL
		ACRES		%	ACRES	BD. FT.	M BD. FT.
WP (120)	II-III	9W	11786	50%	5893	460	2711
		9M	12217		6109	417	2547
		9P	1005		502	327	164
		8W	2549	100%	2549	65	166
		8M	1167		1167	46	54
		8P	59		59	20	1
SUB.			28783		16279	(185)	5643
PP (140)	IV-20%	9W	6063	30%	1819	254	462
		9M	91717		27515	207	5696
		9P	60947		18284	155	2834
		8W	1107	100%	1107	48	53
		8M	4966		4966	40	199
		8P	5498		5498	30	165
SUB.			170298		59189	(55)	9409
LA-DF (140)	III-IV	9W	150916	49%	73949	217	16047
		9M	378732		185579	177	32847
		9P	170355		83474	116	9683
		8W	105039	100%	105039	40	4202
		8M	64962		64962	23	1494
		8P	18239		18239	12	219
SUB.			888243		531242	(73)	64492
S-AF (130)	III-IV	9W	45607	17.5%	7982	282	2251
		9M	86985		15222	250	3805
		9P	58820		10293	225	2316
		8W	5207	100%	5207	14	73
		8M	5965		5965	12	72
		8P	8253		8253	5	41
SUB.			210837		52922	(31)	8558
C-R-GF (120)	III-IV	9W	17321	25%	4330	316	1368
		9M	6489		1617	282	456
		9P	1713		433	226	98
		8W	142	100%	142	14	2
		8M	175		175	12	2
		8P				5	
SUB.			25840		6697	(75)	1926
LP P (100)	II-III	9W	7183	87.5%	6285	193	1213
		9M	13019		11392	150	1709
		9P	6602		5777	81	468
		8W	122895	100%	122895	29	3564
		8M	57623		57623	21	1210
		8P	16032		16032	12	192
SUB.			223354		220004	(37)	8356
Total			1547355				98384

1/ Exclusive of Lodgepole Pine Pole Producing Area

2/ After Net Periodic Annual Growth per Acre for Sawtimber and Pole Stands in Montana--Forest Survey Growth Phase-Dec. 21, 1939

TABLE 19 B KOOTENAI WORKING CIRCLE

PERIODIC GROWTH AND MORTALITY SUMMARY

PAST 10 YEARS

COMBINED FOREST SURVEY AND SUPPLEMENTAL PLOTS

Timber Type	Volume	10 Yr. Growth	No. of Acres of Sample	Growth per Acre per Year	Mortality per Acre per Year
	Present				
	Cu. Ft.	Cu. Ft.		Cu. Ft.	Cu. Ft.
W. PINE	67,566.9	9,989.0	11.9	86.1	18.8
P. PINE	12,759.1	1,665.0	6.0	27.8	8.1
LARCH	65,103.0	6,970.6	14.4	48.4	7.2
D. FIR	21,413.6	2,908.2	6.8	42.8	7.9
SPRUCE	65,073.7	10,042.1	15.2	66.1	116.8
ALPINE FIR	651.2	144.3	.8	18.0	8.5
LP PINE	30,211.6	5,529.0	9.2	61.2	15.8
HEMLOCK	1,546.6	301.5	.8	37.7	5.8
CEDAR	12,952.0	2,697.9	3.6	74.9	7.1

PERIODIC ANNUAL GROWTH OF SAWTIMBER

- NATIONAL FOREST -

Forest Type	Comm. Forest Area	Net P.A.G. per Acre	Prop. Saw-Timber of Total	Sawtimber Growth per Acre	Conv. Factor	Net P.A.G. per Acre	Total P.A.G.
	9 & 8 Strata	Gross Mort.	Cu.Ft.				
	Acres	Cu. Ft.	%	Cu. Ft.		Bd. Ft.	M Bd.Ft.
W. PINE	28,783	67.3	84.3	56.7	5.1	289	8,318
P. PINE	170,298	19.7	81.4	16.0	5.1	82	13,964
LA-DF	888,243	38.0	57.2	21.7	5.0	109	96,818
SP-AF	210,837	-44.0	80.1	-35.2	5.0	-176	-37,107
CED-HEM	25,964	61.1	72.0	44.0	4.8	211	5,478
LP PINE	223,354	45.4	30.9	14.0	4.8	63	14,071
TOTAL	1,547,479						101,542

PERIODIC ANNUAL GROWTH OF OTHER PRODUCTS IN POLE TIMBER

Forest Type	Comm. For. Area	Pole Tbr. Growth per Acre	Total Growth Pole Timber		Conv. Factor Cu. Ft. - Bd. Ft.	Converted. P.A.G. Pole Timber
	9 & 8 Strata					
	Acres	Cu. Ft.	M Cu.Ft.	Cords		M Bd. Ft.
W. PINE	28,783	10.6	305	3,389	3.7	1,128
P. PINE	170,298	3.7	630	6,999	3.7	2,331
LA-DF	888,243	16.3	14,478	160,850	3.7	53,568
SP-AF	210,837	-8.8	-1,855	-20,609	3.7	-6,864
CED-HEM	25,964	17.1	444	4,933	3.7	1,643
LP PINE	223,354	31.4	7,013	77,913	3.7	25,948
TOTAL	1,547,479		21,015	233,475		77,754

TABLE 19C

KOOTENAI WORKING CIRCLE

Percent of Age Class Occurrence by Timber Types in Pole and Sawtimber Classes
Combined Forest Survey and Supplemental Plots

	P.PINE (11)	W.PINE (14)	LP PINE (15)	G.FIR (33)	A.FIR (36)	ENGL. SPRUCE (41)	HEM (48)	W.RED CEDAR (54)	LARCH-D.FIR (55) (01)
Total Locations	22	39	52	6	21	79	12	10	120
21-40			5.8						1.7
41-60		5.1	21.2		4.8	5.1			10.0
61-80	9.1	12.8	23.1	50.0	19.0	2.5		20.0	18.3
81-100	9.1	5.1	17.3		14.3	5.1	33.3		10.0
101-120	18.2	5.1	9.6		14.3	8.9	16.7	20.0	8.3
121-140	4.5	2.6	5.8	33.3	23.8	8.9	8.3		6.7
141-160		18.0	7.7		9.5	12.7	25.0		7.5
161-180	9.1	15.4	3.8			17.7		20.0	10.8
181-200	9.1	10.3	1.9		4.8	8.9	16.7		10.0
201-220	13.6	12.8		16.7		16.4			4.2
221-240						5.1		20.0	2.5
241-260		2.6				1.3			3.3
261-280		2.6	1.9		9.5	1.3			
281-300	18.2					3.8		20.0	2.5
301 +	9.0	7.7	1.9			2.5			4.2

TABLE 19D - MEAN ANNUAL INCREMENT BY TYPES FOR IMMATURE STANDS AND STANDS OF ALL AGES
NATIONAL FOREST LANDS

Forest Type (Rotation)	Commercial		Proportion		Sawtimber		Conversion		Sawtimber		Total MAI	
	Forest Area		Total		MAI/A.		Factor		MAI/A.		Immature All Ages	
	Immature	All Ages	MAI/A.	Percent	MAI/A.	Cu.Ft.			Bd.Ft.	- M bd.ft.	- -	- -
WP (120)	9,414	30,109	45.8	86.5	39.6		5.2		206	1,939	6,202	
PP (140)	71,853	172,499	25.0	82.2	20.6		4.9		101	7,257	17,422	
IPP (100)	237,738	310,552	28.0	31.0	8.7		4.8		42	9,985	13,043	
L-DF (140)	522,056	920,905	17.9	64.2	11.5		5.0		58	30,279	53,412	
S-AF (130)	106,696	222,313	30.3	82.2	24.9		5.2		130	13,870	28,901	
C-H (120)	12,510	25,964	25.8	72.5	18.7		4.9		92	1,151	2,389	
Total	960,267	1,682,342								64,481	121,369	
Inventory growth rates by types - tables accompanying letter of September 22, 1958. S-PLANS-T.M.P.												

TABLE 20

KOOTENAI WORKING CIRCLE
VOLUME OF SALVABLE DEAD AND GREEN CULLS-TREES OF ALL SPECIES
ON NATIONAL FOREST LAND WITHIN THE KOOTENAI WORKING CIRCLE

FOREST STRATA	COMMERCIAL ACREAGE	CU. FOOT VOLUME PER ACRE	TOTAL CU. CUBIC FEET	CORDS
W9W	11786	535	6306	70067
9M	12217	621	7587	84300
9P	1005	463	465	5167
8W	2549	-----	-----	-----
8M	1167	-----	-----	-----
8P	59	-----	-----	-----
P9W	6063	91	552	6133
9M	91717	82	7521	83567
9P	60947	92	5607	62300
8W	1107	-----	-----	-----
8M	4966	-----	-----	-----
8P	5498	-----	-----	-----
LP9W	7183	817	5860	65111
9M	13019	817	10637	118189
9P	6602	595	3928	43644
8W	122895	34	4178	46422
8M	57623	489	28178	313089
8P	16032	49	786	8733
L-DF9W	150916	391	59008	655644
9M	378732	259	98092	1089911
9P	170355	351	59794	664378
8W	105039	107	11239	124878
8M	64962	237	15396	171067
8P	18239	714	13023	144700
S-AF9W	45607	1345	61341	681567
9M	86985	1888	64228	713644
9P	58820	637	37468	416311
8W	5207	-----	-----	-----
8M	5965	-----	-----	-----
8P	8253	-----	-----	-----
C-H-GF9W	17321	588	10185	113167
9M	6489	714	4633	51478
9P	1713	573	981	10900
8W	142	-----	-----	-----
8M	175	-----	-----	-----
8P	-----	-----	-----	-----
TOTAL			516993	5744367

TABLE 21

KOOTENAI WORKING CIRCLEFOREST TYPES IN CABINET WILD AREA
(RESERVED LANDS)

FOREST TYPE	COMPARTMENT NUMBER			
	83	159	193	TOTAL
	AREA IN ACRES			
W9W	17	-----	255	272
W9M	190	-----	-----	190
W9P	10	-----	-----	10
W8P	17	-----	-----	17
W7W	74	-----	-----	74
W7M	8	-----	-----	8
P9M	134	-----	40	174
P9P	92	-----	368	460
P8M	3	-----	-----	3
P8P	12	-----	-----	12
LP9P	-----	-----	92	92
LP8W	155	-----	884	1039
LP8M	215	-----	191	406
LP8P	15	-----	-----	15
LP7P	6	-----	-----	6
L9W	50	-----	505	555
L9M	1315	-----	1085	2400
L9P	577	-----	150	727
L8W	442	-----	866	1308
L8M	1139	-----	215	1354
L8P	188	-----	36	224
L7W	311	-----	-----	311
L7M	59	-----	-----	59
L7P	15	186	111	312
S9W	482	-----	2493	2975
S9M	2563	515	1439	4517
S9P	864	30	823	1717
C9W	-----	-----	81	81
C9M	-----	-----	258	258
NCF	10819	893	5636	17348
NF (W)	342	24	-----	366
NF	8225	1322	222	9769
TOTAL	28339	2970	15750	47059

KOOTENAI WORKING CIRCLE
CABINET WILD AREA COMPARTMENT 159 (BLOCK 6)

TABLE 21A

AREA		SPECIES										
IN		A. Fir										
STRATA	ACRES	W. Pine	P. Pine	LP Pine	Larch	D. Fir	G. Fir	Hemlock	Cedar	Spruce	Cot.	TOTAL
		FT. BM (SCRIBNER)										
S9M	515	33475	---	1240635	758080	166345	1301405	63860	175100	2585815	----	6324715
S9P	30	---	---	---	84240	---	76680	---	6270	105390	----	272580
TOTAL	545	33475	---	1240635	842320	166345	1378085	63860	181370	2691205	----	6597295

CABINET WILD AREA COMPARTMENT 193 (BLOCK 4)

TABLE 21B

STRATA	AREA IN ACRES	SPECIES									
		W. Pine	P. Pine	LP Pine	Larch	D. Fir	A. Fir		TOTAL		
							G. Fir	Spruce			
FT BM (SCRIBNER)											
W9W	255	3253290	71145	53040	530145	567375	193800	440895	262905	206550	6307170
P9M	40	7720	169520	9360	37000	119000	3080	---	1880	---	347560
P9P	368	---	528080	---	77280	574448	---	---	---	---	1179808
LP9P	92	---	---	358064	---	48852	---	---	---	---	406916
LP8W	884	20332	---	617032	1200472	385424	86632	---	---	126412	2436304
LP8M	191	---	---	333868	106005	---	34189	---	---	20055	494117
L9W	505	86355	---	517625	3353705	1727100	241390	---	---	439350	6365525
L9M	1085	522970	463295	506695	3249575	2740710	182280	32550	193130	527310	8418515
L9P	150	9150	162600	61500	283800	207600	10350	33150	6450	---	774600
L8W	866	---	168870	769008	183592	50228	33774	---	---	56290	1261762
L8M	215	---	---	303795	111370	23650	---	---	6235	---	445050
L8P	36	---	---	31788	11376	3168	---	---	---	---	46332
S9W	2493	1017144	---	6005637	2203812	---	4863843	234342	134622	30043143	44502543
S9M	1439	93535	---	3466551	2118208	464797	3636353	178436	489260	7225219	17672359
S9P	823	---	---	---	2310984	---	2103588	---	172007	2891199	7477778
C9W	81	---	---	---	21060	---	62289	358992	79704	---	537759
C9M	258	159444	---	171828	634938	238134	88494	96750	495102	180342	2065032
TOTAL	9781	5169940	1563510	13205791	16433322	7150486	11540062	1375115	1841295	42237345	100739130

TOTAL VOLUME OF SAWTIMBER KOOTENAI PORTION OF CABINET WILD AREA

SPECIES	SPECIES				TOTAL
	W. Pine	P. Pine	LP Pine	Larch	
VOL. M FT BM	7589	3549	25441	31187	178590

TABLE 21C

KOOTENAI WORKING CIRCLE

CABINET WILD AREA (RESERVED)
COMPARTMENT 83 (BLOCK 5)

AREA IN STRATA ACRES		SPECIES										TOTAL
		W Pine	P. Pine	LP Pine	Larch	D. Fir	G. Fir A. Fir	Hemlock	Cedar	Spruce	Cot.	
		M BD. FT. (SCRIBNER RULE)										
W9W	17	216886	4743	3536	35343	37825	12920	29393	17527	48535	13770	420478
W9M	190	1066660	---	67260	652080	158080	315400	254410	277780	342000	---	3133670
W9P	10	28070	---	3540	17140	4140	8060	6490	7260	5970	---	80670
W8P	17	3808	---	---	3230	663	153	---	136	1326	---	9316
P9M	134	25862	567892	31356	123950	398650	10318	---	6298	---	---	1164326
P9P	92	---	132020	---	19320	143612	---	---	---	---	---	294952
P8M	3	---	3000	---	---	600	---	---	---	---	---	3600
P8P	12	---	4800	---	---	1200	---	---	---	---	---	6000
LP8W	155	3565	---	108190	210490	67580	15190	---	---	22165	---	427180
LP8M	215	---	---	375820	119325	---	38485	---	---	22575	---	556205
LP8P	15	---	---	---	---	---	---	---	---	---	---	---
L9W	50	8550	---	51250	332050	171000	23900	---	---	43500	---	630250
L9M	1315	633830	561505	614105	3938425	3321690	220920	39450	234070	639090	---	10203085
L9P	577	35197	625468	236570	1091684	798568	39813	127517	24811	---	---	2979628
L8W	442	---	86190	392496	93704	25636	17238	---	---	28730	---	643994
L8M	1139	---	---	1609407	590002	125290	---	---	33031	---	---	2357730
L8P	188	---	---	166004	59408	16544	---	---	---	---	---	241956
S9W	482	196656	---	1161138	426088	---	940382	45308	26028	5808582	---	8604182
S9M	2563	166595	---	6174267	3772736	827849	6476701	317812	871420	12868823	---	31476203
S9P	864	---	---	---	2426112	---	2208384	---	180576	3035232	---	7850304
TOTAL	8480	2385679	1985618	10994939	13911087	6098927	10327864	820380	1678937	22866528	13770	71083729

TABLE 22

SUMMARY OF 5 YEAR PLANTING PLANS

KOOTENAI WORKING CIRCLE 1959--1963

YEAR	WHITE PINE				PONDEROSA PINE				DOUGLAS FIR				ENGL. SPRUCE				CEDAR				TOTALS			
	P & M		K. V.		P & M		K. V.		P & M		K. V.		P & M		K. V.		P & M		K. V.		P & M		K. V.	
	Acres	M	Acres	M	Acres	M	Acres	M	Acres	M	Acres	M	Acres	M	Acres	M	Acres	M	Acres	M	Acres	M	Acres	M
959	10	10	--	--	321	131	190	128	300	50	4	3	--	--	123	68	34	30	--	--	665	221	317	199
960	60	12	--	--	190	100	295	155	35	17	275	170	200	50	451	220	--	--	--	--	485	179	1021	545
961	--	--	--	--	170	90	224	130	40	20	118	90	68	30	515	275	--	--	37	30	278	140	894	525
962	--	--	--	--	140	80	130	70	25	10	232	180	150	60	372	230	45	30	45	30	360	180	779	510
963	--	--	5	4	165	90	175	110	55	30	213	150	130	60	420	280	--	--	--	--	350	180	813	544
Yr. total	70	22	5	4	986	491	1014	593	455	127	842	593	548	200	1881	1073	79	60	82	60	2138	900	3824	2323

Total all Species all Programs for 5 Year Period - - - - -5,962 Acres
3,233 M Trees

Average for 5 Year Period - - - - -1,192 Acres
647 M Trees

TABLE 23 - WORKING CIRCLE CONTROL RECORD SUMMARY
(Reference FSH 2444.5)

Forest Kootenai Working circle Date February 1, 1960

Fiscal year	Product	In Millions of Board Feet					Nonregulated cut	
		Allowable cut	Cumulative allowable cut	Actual annual cut	Cumulative annual cut	Status of cumulative cut	Adjusted allowable cut	Cumulative cut
1960	11" +	164.0 ^{2/}	164.0	162.7	162.7	- 1.3	165.3 ^{1/}	
	11" -	72.0 ^{2/}	72.0	-	-	- 72.0	90.0	
	11" +							
	11" -							
	11" +							
	11" -							
	11" +							
	11" -							
	11" +							
	11" -							
	11" +							
	11" -							
	11" +							
	11" -							
	11" +							
	11" -							

^{1/} Owing to the lack of definition of unregulated cut in regional instructions, we have not carried unregulated volume figures. 18.7 MM is dead spruce.

^{2/} 215.1 M cords converted @ 3 cords per M = 72.0



District

Date _____

192



Forest

Kootenai

District

Fisher River

Working

Kootenai

Date _____

January 28, 1960

[illegible]

District Fisher River

Date January 28, 1960

Comp. no.	Name of sale	1/1/60-6/30/60		FY 1961		FY 1962		FY 1963		FY 1964		FY 1965	
		Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut
168	0-\$2000												
154	* West Fisher Midas									1.0	1.0		
	* Buck Creek									2/.5	2/.5		
										8.0	1.0		3.0
										8.5	3.0		3.5
149	0-\$2000												
151	* Cow Creek											1.0	1.0
	* Cody Creek											2/.5	2/.5
												10.0	3.5
												5.0	-
	Totals	5.0	3.0	17.0	12.3	19.5	18.5	15.5	17.0	17.5	18.5	16.0	18.5
								2/.5	2/.5	2/.5	2/.5	2/.5	2/.5

1* Rights of way required
2/ Unregulated 11"



Forest

Kootenai

District

Fortine

Working

Kootenai.

Date January 28, 1960

[illegible]



Fortine

Date January 28, 1960

* Rights of way required
2/ Unregulated 11" +



TABLE 24 - PROPOSED CUT AND SELL PLANS
continued
(Reference FSH 2412.5)

Forest Kootenai

District Libby

Working circle Kootenai

Date January 28, 1960

In Millions of Board Feet

Comp. no.	Name of sale	1/1/60-6/30/60		FY 1961		FY 1962		FY 1963		FY 1964		FY 1965	
		Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut
	Cut total fwd from 24-3		4.8		14.2		14.1		4.1				
37	Lower Lost Fork	5.1			2.0		2.0		1.1				
188&190	Hoodoo Flat	11.0			1.0		3.0		4.0		3.0		
	0 - \$2000			1.3 2/ .5	1.3 2/ .5								
73	Ransome Cr.			6.0			2.0		3.0		1.0		
191 *Ramsey				3.0	1.5		1.5		.5				
192 *East Midas				4.0	1.0		2.5		2.0		2.0		
81 & 82 *Carney				5.0			1.0						
	0 - \$2000					2/ .5 12.0	.5 .5		2.0		4.0		4.0
175	Cowell												
77 *Lower Beulah						9.0			1.0		3.0		3.0
188 *Leigh Creek						5.0			1.0		2.0		2.0
	0 - \$2000							2/ .5 6.0 4.0	.5 2.0 1.0				
73 Hennessey Cr.											3.0		1.0
186 Granite Cr.											2.0		1.0
182 & 183 *Cedar Creek								8.0			2.0		3.0
81 *Rainy Creek				- 167 -				5.0			.5		3.0



TABLE 24 - PROPOSED CUT AND SELL PLANS
continued
(Reference FSH 2412.5)Forest KootenaiDistrict LibbyWorking circle KootenaiDate January 28, 1960

Comp. no.	Name of sale	In Millions of Board Feet											
		1/1/60-6/30/60	FY 1961	FY 1962	FY 1963	FY 1964	FY 1965						
		Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut
72	0 - \$2000 West Fork Quartz							2/ .5	.5	2/ .5	.5		2.0
191	*Upper Libby Cr.							6.0					2.0
188	*Upper Cherry Cr.							5.0					.5
74	*Bobtail Cr.							6.0					1.0
179	0 - \$2000												
177, 178, 186	MacMillan Ridge No Creek Face							2/ .5	.5	2/ .5	.5		.5
73	Upper Quartz							6.0					
								5.0					
74 & 75	*Upper Pipe Cr. Ridge							8.0					
								5.0					
	Totals	16.1	4.8	2/ .5	19.3	21.0	26.5	26.6	23.5	22.2	25.5	23.0	24.5
				2/ .5	2/ .5	2/ .5	2/ .5	2/ .5	2/ .5	2/ .5	2/ .5	2/ .5	2/ .5
													23.0
													.5

*Rights of way required.
2/ Unregulated 11" +.

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District Rexford

Date January 28, 1960[illegible]



District RexfordDate January 28, 1960

* Rights of way required
1/ Regulated Other Products Volume
2/ Unregulated 11"

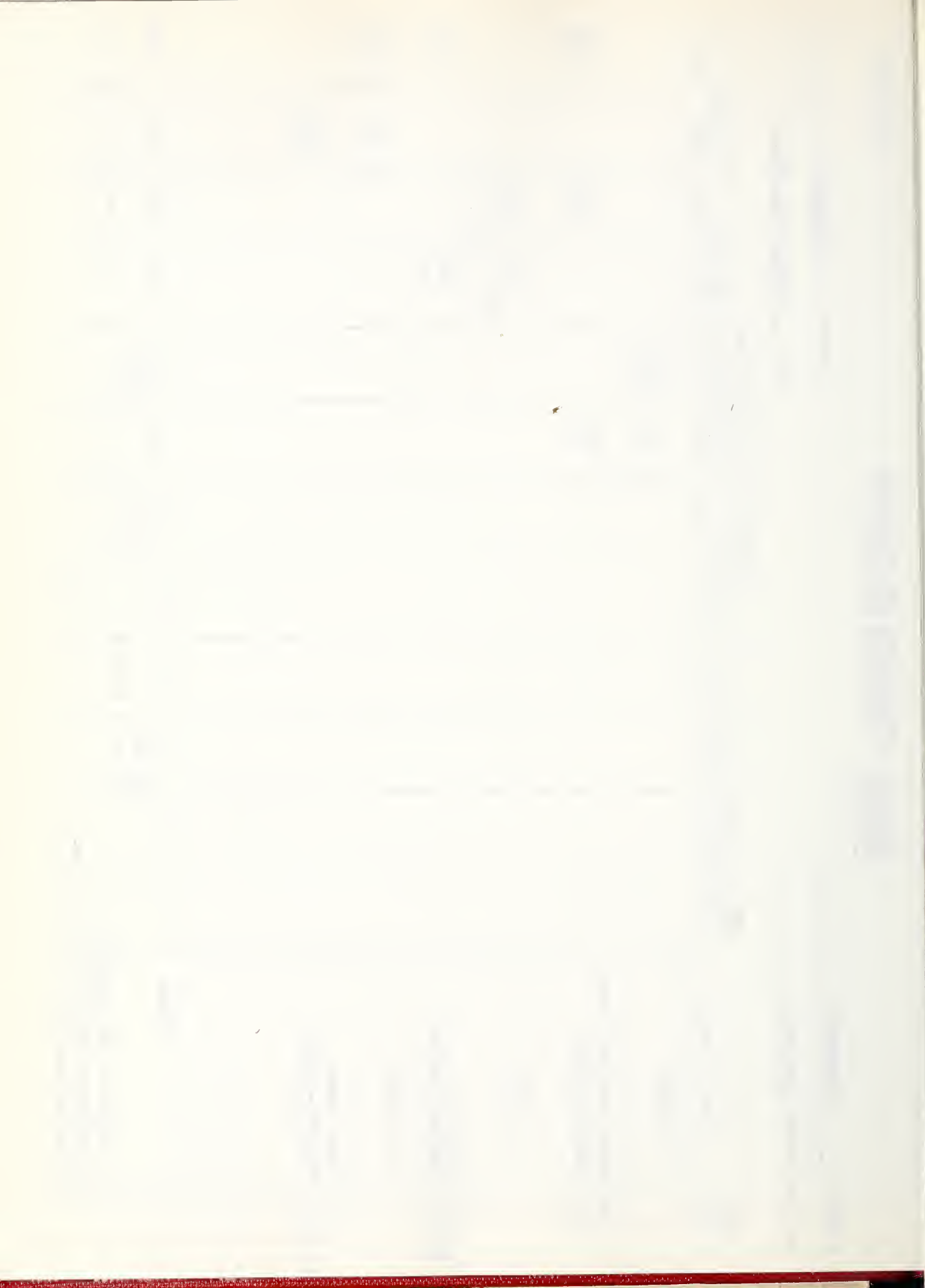


TABLE 24 - PROPOSED CUT AND SELL PLANS
continued
(Reference FSH 2412.5)

Form 24-4

Forest Kootenai
Working circle Kootenai

District Troy

Date January 28, 1960

Comp. no.	Name of sale	In Millions of Board Feet											
		1/1/60-6/30/60		FY 1961		FY 1962		FY 1963		FY 1964		FY 1965	
		Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut
	Cut totals fw'd from 24-3		2.1		13.8		12.6		9.0		1.5		
	MONTANA SALES												
45	0 - \$2000 Feeder Cr.	1.0 2.8			1.0		1.4		.4				
64	0 - \$2000				3.0				2.5		1.5		
50	Spar Hiatt Cr.			5.5	1.5		1.5						
49	So. O'Brien			3.5	2.0		2.0						
43	Rabbit Cr.			1.5	1.5		1.0		.7				
	Ferrel Cr.			2.5	.8								
	0 - \$2000					3.0	3.0						
50	Upper O'Brien Cr.					3.0			2.0		1.0		
70	China Basin					2.5			1.0		1.5		
68 & 69	*Iron Creek					5.0			1.0		2.0		2.0
64	*Twilight Ridge					5.0			1.0		2.0		2.0
	0 - \$2000							3.0	3.0				
63&64	Stanley Ridge												
50	O'Brien intermediate							3.0			1.0		2.0
								2.0			2.0		
60	*S. Fk. Callahan							7.0			1.5		3.0
						- 171 -							

* Rights-of-way required



TABLE 24 - PROPOSED CUT AND SELL PLANS
continued
(Reference FSH 2412.5)

Form 24-4

Forest		Kootenai		District		Troy							
Working circle		Kootenai		Date		January 28, 1960							
		In Millions of Board Feet											
Comp. no.	Name of sale	1/1/60-6/30/60		FY 1961		FY 1962		FY 1963		FY 1964		FY 1965	
		Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut
	0 - \$2000												
56	Logan Creek									3.0	3.0		
50	Studebaker Skyline									2.0	1.0		1.0
										5.0			2.0
	0 - \$2000												
44	Arbo Creek											3.0	3.0
57	*Upper Ruby											5.0	1.0
												4.0	
	Sub-total MONTANA	3.8	2.1	16.0	21.6	18.5	21.5	15.0	20.6	10.0	18.0	12.0	16.0
	IDAHO SALES												
60	Upper Goat			6.0			2.0		2.0		2.0		
60	*S. Fk. Callahan							4.0	1.0		2.0		1.0
59	*Smith Cr.							6.0			1.0		3.0
60	*Glad Creek									3.0			1.0
59	*Freezecat-Sweezey-N.Fk.									12.0			1.3
56	Idamont Creek											5.0	1.0
	Sub-total IDAHO			6.0			2.0	10.0	3.0	15.0	5.0	5.0	7.3
	TOTAL - Troy Dist.	3.8	2.1	22.0	21.6	18.5	23.5	25.0	23.6	25.0	23.0	17.0	23.3
							- 172 -						



TABLE 24 - PROPOSED CUT AND SELL PLANS
continued
(Reference FSH 2412.5)

Form 24-4

Forest Kootenai

District Warland

Working circle Kootenai

Date January 28, 1960

Comp. no.	Name of sale	In Millions of Board Feet											
		1/1/60-6/30/60		FY 1961		FY 1962		FY 1963		FY 1964		FY 1965	
		Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut
	Cut totals fwd from 24-3		2.1		4.8								
	0 - \$2000												
111	Dry Fk. Cripple Horse	.4											
88	Bristow Cedar	3.5			2.0		1.5						
87	Barron Creek	1.0			1.0		3.0		3.0				
	0 - \$2000	9.0											
86	Jackson			1.8	1.8								
111	Warland - Davis			.3	.3								
				1.0	1.0		1.0		1.5		1.0		
				3.5					1/ 1.0				
109	* Five Mile Creek			2/									
86	* No. Jackson Cr. '61			1/ 1.0	2.0		3.0		3.0		1.0		
	0 - \$2000			8.0	1.0		2.0		2.0				
				6.0									
88	* So. Ziegler Face					1.2	1.2		3.0		5.0		3.0
				2/ 14.0	2.0								
	0 - \$2000												
112&113	Hornet Ridge					1.2	1.2		1.2				
				2/ .3	.3				2/ .3		3.0		3.0
				6.0					6.0				
108	* Ten Mile-Stenerson					10.0			10.0		1.0		3.0
	0 - \$2000												
91	Parsnip Creek									1.2	1.2		2.0
										2/ .3	2/ .3		
									5.0		1.0		

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WarLand

January 28, 1960

FY 1965

1/ Regulated Other Prod. Vol.
2/ Unregulated 11n %
* Right-of-way required



TABLE 24 - PROPOSED CUT AND SELL PLANS
continued
(Reference FSH 2412.5)

Form 24-4

Forest Kootenai
Working circle Kootenai

District Yaak-Sylvanite

Date January 28, 1960

Comp. no.	Name of sale	In Millions of Board Feet									
		1/1/60-6/30/60		FY 1961		FY 1962		FY 1963		FY 1964	
		Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut
	Cut totals fwd'd from 24-3		7.4		30.7		4.6		1.5		
	0 - \$2000	1.0	.5		.5						
33	Fix Creek	1.5	.3		1.2						
30	Burnt Creek East Face	5.0			2.0		3.0				
9	French Creek	6.5			.5		3.5		2.5		
2	Lower Hawkins	3.2			1.6		1.6				
24	Upper Spread-Hidden	1.6			1.6						
32	* Beaver Creek	9.5			1.5		4.0		3.0		
31	* S.Fk.Yaak Flat-Cool	10.0			1.5		3.0		4.0		
	0 - \$2000		.5		1.0						
			1/1.0		1/1.0						
27	N. Fork Meadow				1.0		2.0		2.5		
23	Lower North-Large				6.0		3.0		1.0		
29-39	4th July - Cyclone				5.0		.8		5.0		2.5
31-35	Dutch-Lang				14.0		1.0		2.0		
22	Whitetail				4.0		1.5		2.5		
26	Clark Mt. Pulp				6.0		2/1.0				
					2/5.0		2/1.0				
8,10,11,12,13,14	* Lick-Grubstake				16.0		1.0		4.0		4.0
	0 - \$2000										
							1.0				
					1/1.0		1/1.0				
					14.0				2.5		
18	Vinal-Hoskins						3.0		2.0		4.0
20	North Beetle Face								2.0		
19	Hensley South Face						7.0		1.5		1.5
26-31	Gus Creek						6.0		.7		3.0
37-44	Arbo-Hemlock						7.0		1.0		4.5
30	Burnt Creek Pulp						14.0		2/2.0		
					2/4.0		2/2.0				
26	* Pheasant Cr. Blowdown						8.0		3.0		1.0
							- 175 -				



TABLE 24 - PROPOSED CUT AND SELL PLANS
continued
(Reference FSH 2412.5)

Form 24-4

Forest	Working circle	Kootenai	District		Date		In Millions of Board Feet											
			Yaak-Sylvanite		January 28, 1960		1/1/60-6/30/60	FY 1961	FY 1962	FY 1963	FY 1964	FY 1965						
Comp. no.	Name of sale	Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut	Sell	Cut	
	0 - \$2000									1.0	1.0							
28	S. Fork Meadow									1/ 1.0	1/ 1.0							
18	Vinal Creek									13.0								4.0
28	S. Fork Meadow Pulp									25.0	2.0							5.0
										2/ 4.0	2/ 2.0							
	0 - \$2000																	
33	Zulu-Can Creeks																	
23	North Creek									1/ 1.0	1/ 1.0							2.0
25	Middle Hellroaring									4.0								1.0
43	Wampoo									4.0	1.0							2.0
30	Main Burnt									6.0								1.0
4-5	Obermeyer Mtn.									5.0								1.0
2-3	Marmot Mtn.									6.0								1.0
27	N. Fk. Meadow Pulp									10.0	2/ 2.0							1.5
										2/ 3.0	2/ 2.0							2/ 1.0
	0 - \$2000																	
20	Pete Creek Face #2																	1.0
14-15-16	Blacktail-Porcupine																	1/ 1.0
18	Bunkerhill																	6.0
27	N. Fork Meadow #2																	15.0
20	Blacktop																	10.0
										8.0								2/ 3.0
	Totals	38.3	8.7	52.0	45.6	57.0	34.0	39.0	39.7	40.0	40.3	40.0	40.0	40.0	40.0	40.0	40.0	40.0
			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
				5.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
	Regulated Other Prod. Vol.																	
1/ 2/ *	Unregulated 11" +																	
	Right-of-way required.																	



TABLE 25 - TIMBER ACCESS ROADS
(Reference FSH 2412.5)

Forest		Kootenai		Working Circle		Kootenai		District		Fisher River		Date February 1, 1960	
A. Details by Projects													
Comp. No.	Purchaser or Sale Name	Road Name and Project No.	Kind of Work	Planned FY 1961		Proposed FY 1962		Proposed FY 1963		Road Survey		Date of Completion	
				Planned Mi.	Govt. Oper. Coop. Mi.	Est. Cost (M\$)	Govt. Oper. Coop. Mi.	Est. Cost (M\$)	Type Planned	Survey Design			
171	Miller Lake	East Fisher #228	R	2	12					Complete		Fall '59	
144	Tamarack Calx Cr.	Kavalla Fks. #2363	C	2.1	16					2	2	Summer '59	
		Lower Calx Cr. Loop #2347	C	1.3	9					3	3	Summer '59	
		Calx Kavalla No. 1 6819	C	1	5					3	3	Summer '59	
		Tamarack Calx Cr. Loop #2346	C	2.7	27					3	3	Summer '59	
144	Kavalla Creek	Kavalla Fks. #2363	C	1	7					3	3	Summer '59	
		Kavalla Cr. Forks #2383	C	1	4					3	3	Summer '59	
	W. Fisher Midas	Libby Cr. Fisher Riv. #231	R						9.0 5.1 65.9	1	1	Summer '63	
		Miller Cr. W. Fisher #385	R						3.0 1.7 21.3	3	3	Summer '63	
		Lower Teeters Face #6853	R						2.0 1.2 9.8	3	3	Summer '63	
- 177 -													

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Date 1-29-60

District
Fisher River

Kootenai

Working

Kootenai

A. Details by Projects

Comp. No.	Purchaser or Sale Name	Road Name and Project No.	Kind of Work	Planned FY 1961		Proposed FY 1962		Proposed FY 1963		Type Planned	Survey Design	Date of Completion
				Planned Mi.	Govt. Oper.	Coop. Mi.	Govt. Oper.	Coop. Mi.	Govt. Oper.			
162	Teepee Lks.	Gowell Cr. Swamp Cr. 6737	C/S	6	51					Aerial Survey	1	Spring/60
		Tepee Cr. 6740	C/S	1.5	8					2	2	Summer/60
		Coyote Rient-hart Conn. 6881	C/S	2	12					2	2	Fall/60
	McGinnis Cr.	6759	C/S			1.5	9			2	2	Spring/61
		870.2	R/S			2.5				1	1	Summer/60
	Swamp Cr. Face	4774	C/S			5	42			1	1	Summer/60
	Schreiber Cr.	808	R/S	2.5	2.0	14.0				1	1	Summer/60
		6846	C/S	1.5	1.2	7.8				2	2	Summer/61
	Bayhorse Cr.	6754	C/S				10			2	2	Summer/61
	Kenelty Mtn.	761	C/S			1.5	2.4	24.6		1	1	Summer/62
		761	R/S			3.0	.8	5.2		1	1	Summer/62
		6843	C/S			1.0	.8	5.2		2	2	Summer/63
	Up. McGinnis	870.2	R/S			1.0			6	1	1	Summer/62
		7151	C/R/S						13	2	2	Summer/63
	Silver Butte Cr.	58	R/S/B							Flown		
		594	C/S							1	1	Spring/62
Up. Tamarack	2346	C/S							Flown			
Elk Cr.	4422	R/S							3	3	Summer/63	
		C/S							1	1	Summer/62	
									</			

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TABLE 25 - TIMBER ACCESS ROADS
continued (Reference FSH 2412.5)Forest Kootenai Working Circle Kootenai District Fortine Date 1-21-60

A. Details by Projects

Comp. No.	Purchaser or Sale Name	Road Name and Project No.	Kind of Planned Work	Planned FY 1961		Proposed FY 1962		Proposed FY 1963		Road Survey		Date of Completion
				Mi.	Govt. Open Coop. Mi.	Est. Cost (\$)	Mi.	Govt. Open Coop. Mi.	Est. Cost (\$)	Type Planned	Survey Design	
119	Helms Blacktail	Ten Lakes #7091	C	0.3	0.5					3	3	8-1-59
121	Ksanka Weasel Lake	Weasel Cr. #7108	C B Cu	0.6	5.5					3	3	9-1-59
130	Ksanka Deep Cr.	S. Fk. Deep Cr. #7013	C Cu	1.0	2.5					3	3	8-1-59
		S. Fk. Deep Cr. Spur #7015	C Cu	1.0	2.5					3	3	7-1-60
120	Lost Cr. Rich Cr.	Nam Creek #7100	R S	0.4	2.6					3	3	8-1-59
	"	Clarence-Rich Cr. #7022	R S	1.3	5.6					3	3	8-1-59
	"	E. Rich Cr. #7101	R S	1.2	4.7					3	3	8-1-59
134	Osler Lake Cr.	5 Mi.-Lake Cr. #48	CSB Cu	3.48	29.0					1	1	9-1-59
	"	W. Swamp Mtn #7156	C Cu	2.5	6.5					3	3	5-1-59
	"	Skelley Cr. #3550	C Cu			1.0	3.8			3	3	5-1-59
120	Osler Wolverine Robin	Wolverine Cr. #7086-1	R Cu S	2.35	8.7					3	3	7-1-59
	"	Robin Cr. #7090	R Cu	.25	2.3					3	3	7-1-59
	"	Burma Rd. #1001-3	C Cu S	1.25	6.3					3	3	7-1-60



TABLE 25 - TIMBER ACCESS ROADS
continued (Reference FSH 2412.5)

Forest		Kootenai		Working Circle		Kootenai		District		Fortune		Date		1-21-60	
A. Details by Projects															
Comp. No.	Purchaser or Sale Name	Road Name and Project No.	Kind of Work Planned	Planned FY 1961		Proposed FY 1962		Proposed FY 1963		Road Survey Type Planned	Date of Completion				
				Mi.	Govt. Open Coop.	Mi.	Govt. Oper. Coop.	Mi.	Govt. Oper. Coop.						
120	Osler Contd.	#7091	Ten Lakes	C	Cu	1.0	10.0			3	3			7/1/60	
123	Fluid Bluesky	Stoken-Williams Cr. #7062		C		1.0	2.2				3			7/1/58	
131	Quilling Martin Lake	Laughing Water #7008		C	Cu S	1.0	3.2				3			5/1/59	
	"	Martin Lake #7007		R		.25	0.5				3			5/1/59	
	"	Murphy Lake #7031		S		.50	0.3				3			5/1/59	
120	St. Regis Wigwam Cr.	Bluebird Cr. #7085-1		R(Finish)		1.5	1.0				3			10/1/58	
		Therriault Lakes #319		R	Cu "	2.0	2.0				3			10/1/58	
120	Tobacco Rvr. Wam Cr.	Wam Cr. #7100		R	Cu S	0.9	3.6				3			7/30/59	
						0.5	0.3				3			7/30/59	
120	Amer. Tbr. Lower Wigwam	Robin Cr. #7090		R	Cu	1.13	4.0				3			7/1/59	
		Lower Wigwam #7094		R	Cu C S	.38	0.6				3			7/1/59	
						.25	1.6				3			7/1/59	
														180	-



TABLE 25 - TIMBER ACCESS ROADS
continued (Reference FSH 2412.5)

Forest Kootenai		Working Circle	Kootenai	District	Fortune	Date	1-22-60
A. Details by Projects							
Comp. No.	Purchaser or Sale Name	Road Name and Project No.	Kind of Work	Planned FY 1961	Proposed FY 1962	Proposed FY 1963	Road Survey
				Planned Mi.	Govt. Open Coop. Mi.	Est. Cost (\$)	Type Planned
							Survey Design
							Completion
135	Lime Cr.	Lime Cr. #3780	C Cu S 4.5	41.0			1
		Brimstone-Sunday Cr. #865	C Cu		1.0	4.0	1
133	Cayuse-Swamp Sutton Rdg	Swamp Cr. #494	R Cu S 2.7	22.0			1
		Swamp Cr. #3553	C Cu BS		5.0	40.0	1
		Skelly Cr. #3550	C Cu			0.5	3
		Swamp Cr. - Park Cr. #2 #3555	C Cu			0.5	3
		Swamp Cr. - Park Cr. #3 #3556	C Cu			0.5	3
		Cayuse Cr. #3581	C Cu S 3.8	30.0		2.0	1
		Lower Cayuse Cr. Loop #3582	C Cu	3.0	1.0		3
		Beaver Div. #3586	C Cu		1.0	3.0	3
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TABLE 25 - TIMBER ACCESS ROADS
continued (Reference FSH 2412.5)

Forest	Kootenai	Working Circle	Kootenai	District	Fortune	Date	1-22-60
A. Details by Projects							
Comp. No.	Purchaser or Sale Name	Road Name and Project No.	Kind of Work	Planned FY 1961	Proposed FY 1962	Proposed FY 1963	Date of Completion
				Planned Mi.	Govt. Open Coop. Mi.	Est. Cost (M\$)	Type Planned Survey Design
136	Wolf Cr. Divide	Fortune Cr. Wolf Cr. #36	R Cu	2.0	20		1
		W. Fortune Cr. #3531	C Cu	0.5	4		3
135	Stewart Cr.	Jim Cr. #3730	R Cu S	1.0	8		1
		Sunday Mtn. #3732	C Cu S	3.0	1.6	20.0	1
		Lime Ridge #3777	C Cu		0.5	2.0	3
		Upper Lime Ridge #3775	C Cu		0.5	2.0	3
123	Bug Cr.	E. Grave Cr. #7039	C Cu B	.3	5		3
		Bug Cr. #7040	C Cu	2.0	1.8	6.2	3
138	Advent Cr.	W. Advent Cr. #3710	R Cu	4.0	32		1
		Advent Cr. #3712	C		1.0	8	3
120	Ten Lakes	Ten Lakes #7091	C Cu			2.0	3
		Ten Lakes Spur #7098	C Cu		2.5	3.6 16.4	3
						- 182 -	



TABLE 25 - TIMBER ACCESS ROADS
continued (Reference FSH 2412.5)

Forest	Kootenai	Working Circle	Kootenai	District	Fortune	Date						
A. Details by Projects												
Comp. No.	Purchaser or Sale Name	Road Name and Project No.	Kind of Work	Planned FY 1961		Proposed FY 1962		Proposed FY 1963		Road Survey Type Planned	Date of Completion	
				Planned Mi.	Govt. Open Coop. Mi.	Est. Cost (M\$)	Govt. Oper. Coop. Mi.	Est. Cost (M\$)	Govt. Oper. Coop. Survey Design			
	Upper Mdw. Cr.	Little Therriault Slope #7088	C		3	1.8	16.2	1	6	1	1	Spring/61
	Blacktail (62)	Burma Rd. #1001	R		8	4.5	3.5			3	3	Complete
	Upper Twin Mdw.	Skillet Cr. #3518	R		2.5		15			1	1	Spring/61
		Twin Mdw. Sunday Cr. #3520										
		Alder Slope #3512	C & R		1		10	1.5	15	1	1	Spring/61
	Otter Cr.	Otter Cr. #3512	C					1.5	9	3	3	Summer/63
		7110						3	20	1	1	Summer/62
	Griffith Cr.	Foothill Rd. #7077	C,R					2	14	1	1	Summer/62
	N. Pinkham Ridge	Pinkham Ridge 3668	C,R					1.5	6.8	1	1	Summer/62
	Barnaby Cr.	Foothill Rd. 7077	C					.5	3.5	1	1	Summer/62
		Barnaby Cr. Barnaby Mtn. 7120	C					5	4.4	1	1	Summer/62
	U. Sunday Cr.	Martin Divide #3708	C					2	1.0	1	1	Summer/62
		Alder Slope 3512	C					1.5	1.0	3	3	Summer/63
	Mud Cr.	Foothill Rd. #7077	C					3.5	1.5	1	1	Summer/63
		Mt. Gebralter Rd. #7078	C					2.0	1.5	3	3	Summer/63
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TABLE 25 - TIMBER ACCESS ROADS
continued (Reference FSH 2412.5)

Forest Kootenai		Working Circle		Kootenai		District		Libby		Date		January 29, 1960	
A. Details by Projects													
Comp. No.	Purchaser or Sale Name	Road Name and Project No.	Kind of Planned Work	Planned FY 1961		Proposed FY 1962		Proposed FY 1963		Road Survey		Date of Completion	
				Mi.	Govt. Oper. Coop.	Mi.	Govt. Oper. Coop.	Mi.	Govt. Oper. Coop.	Type Planned Survey Design			
	St. Regis 8-17-59	Pipe-Bull Conn. #1	C	3.3	16					2	2	6/59	
	Pipe Cr. Ridge #4696												
	Big Cr. Baldy Bruin Conn. #1												
	8-31-59	#4731.1	C			2.1	8			2	2		
	Grain-S. Fk. Big Creek #4732		R(S-Cu)	2.3	5					2	2		
	Big Cr. Baldy Mt. #309		R(Cu)	5.2	1					2	2		
	9/9/59 Pipe Cr. -												
	Pipe Cr. Sum. Beulah Ridge #4716		C	1.6	11	1.5	10			2	2		
	9-14-59 Blue Cr. #4749		C(B)	4.2	44					2	2		
	7-28-58 Cable Cr. #4783		C(B)	1.0	6					2	2		
	Bear-Cable												
	5-11-59 Lower Lindy #6146		C	1.5	13	1.5	13			2	2		
	Quartz Cr. #6145		C			1.0	10			2	2		
	Lindy Loop												
	Quartz Cr. #600		C	5.6	111					2	2		
		Cattle-guard		1	1.0					1	1	Done	
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Comp. No.	Purchaser or Sale Name	Road Name and Project No.	Kind of Work	Planned FY 1961		Proposed FY 1962		Proposed FY 1963		Road Survey Type Planned	Date of Completion
				Planned Mi.	Govt. Oper. Coop. Mi.	Planned Mi.	Govt. Oper. Coop. Mi.	Est. Cost (M\$)	Est. Cost (M\$)		
	Cascade Machine Doak Cr. 4-6-59	Upper Rice Creek #4670	C	.8	4						
		Rice Fks. Loop #4746	C	3.8	32						
	St. Regis 8-3-59	Lafoe Lake #4712	C	2.0	20						
	Lafoe Cr.	Flattail-N. Turner #6165	C	1.5	8						
	Cedar Cr.	Cedar Cr. #402				6.0	4.8	55.7	1	1	Su/62
		S.Cedar Face #1 #6177				1.5	1.2	9.8	3	3	Su/62
	Ramsey Cr.	Doak-Rainy #2 #6171				5.0	4.0	36.0	1	1	Su/62

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TABLE 25 - TIMBER ACCESS ROADS
continued
(Reference FSH 2412.5)

Forest		Kootenai	Working Circle		Kootenai	District	Libby	Date		February 1, 1960	
A. Details by Projects											
Comp. No.	Purchaser or Sale Name	Road Name and Project No.	Kind of Work	Planned FY 1961		Proposed FY 1962		Proposed FY 1963		Road Survey Type Planned	Date of Completion
				Planned Mi.	Govt. Oper. Coop. Mi.	Est. Cost (\$)	Govt. Oper. Coop. Mi.	Est. Cost (\$)	Govt. Oper. Coop. Mi.		
	Hoodoo Flats	Bear Cr. #278	R	6	50	35	42		1	1	Spring '60
		Big Cherry View #6205	C			3	21		3	3	Summer '61
		Big Hoodoo Loop #6206	C					3	3	3	Summer '62
	Ransom Creek	4654	R	5	6				3	3	Fall '59
		Pipe Cr. 68	R	1.6	24				1	1	Fall '59
		Quartz Forks 4689	C	1	7.5				3	3	Fall '59
	Ramsey Creek	Ramsey Poorman Cr. #6214	C	3.5	21				1	1	Spring '60
	E.Midas	Midas-Howard Lake #4778	C	3.5	29				1	1	Spring '60
	Carney Cr.	#6174	C	7.0	5.0	65.0			1	1	Summer '60
	Cowell Cr.	Cowell Cr. #866	C/R				10.0	7.5	1	1	Summer '62
	"	Brush Mtn. Spur #6189	C			2.0	1.4	13.6	3	3	Spring '63
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TABLE 25 - TIMBER ACCESS ROADS
continued (Reference FSH 2412.5)

Forest		Kootenai		Working Circle		Kootenai		District		Libby		Date		February 1, 1960	
A. Details by Projects															
Comp. No.	Purchaser or Sale Name	Road Name and Project No.	Kind of Work	Planned FY 1961		Proposed FY 1962		Proposed FY 1963		Road Survey		Date of Completion			
				Planned Mi.	Govt. Oper. Coop. Mi.	Est. Cost (\$)	Govt. Oper. Coop. Mi.	Est. Cost (\$)	Govt. Oper. Coop. Mi.	Type Planned	Survey Design				
	Cowell Cr.	Upper Cowell #4771	C		1.5	1.1	9.9			3	3	Spring '63			
	Leigh Cr.	Leigh Cr. #4786	R					2	17	1	1	Summer '61			
		Cherry Cr. # 867	R					5.5	36	1	1	Summer '61			
	Henessey Creek	Quartz Creek	C/R					4	33	1	1	Summer '61			
	Granite Creek	Granite Cr. #618	C R					6.5	52	1	1	Summer '61			
	Lower Beulah Cr.	Lower Bearfite #4723	C		2.0	2.4	13.6			3	3	Summer '62			
		Bearfite E. Pipe #1 #4722	C		2.0	2.4	11.6			3	3	Summer '62			
		E. Fork Pipe Cr. #336	R		5.5	4.1	78.4			1	1	Summer '62			
	</														



TABLE 25 - TIMBER ACCESS ROADS
continued (Reference FSH 2412.5)

Forest Kootenai Working Circle Kootenai District Rexford Date 1/28/60

A. Details by Projects

Comp. No.	Purchaser or Sale Name	Road Name and Project No.	Kind of Planned Work	Planned FY 1961		Proposed FY 1962		Proposed FY 1963		Road Survey		Date of Completion
				Planned Mi.	Govt. Open Coop. Mi.	Est. Cost (M\$)	Govt. Oper. Coop. Mi.	Est. Cost (M\$)	Govt. Oper. Coop. Mi.	Type Planned	Survey Design	
103-104	Gut Creek	Gut Creek #7939	C/S	0.4	3.0					Completed	Completed	Spring/59
		Helmer Mtn. #7987	C	2.3	6					3	None	Spring/59
100	9-21-59	N.Fk. Sullivan #8021	R	1.0	1					3	None	Fall/59
106	10-13-59	Tweed-Rex. #565	C/CU/S	3.4	33		.9	8		Completed	Completed	Summer/59
	Sutton Cr. 619	Sutton Cr. 619	C/CU/S	2.1	25		.5	6		Completed	Completed	Summer/59
	W. Beartrap 7980	W. Beartrap 7980	C/CU/S	2.6	20		1.9	15		3	None	Summer/59
100	9-18-59	Sull. Boulder No. 1 #7237	R/CU	.2	1					3	None	Fall/59
101	S.Fk. Sull. 9-11-59	Young cr. Sull. #7205	R/CU	1.7	3					2	2	Fall/59
105	S.Fk. Dodge 10-29-57	Sull. #7205	R/CU/S	.4	1					3	None	Fall/59
102	Pinkhan L. 10-16-59	U. Young Cr. #7202	C/CU	1.0	3					2	2	Fall/59
	U. Young Cr. #7202	U. Young Cr. #7202	R	1.	2					2	2	Fall/59
	Young Cr. #303	Young Cr. #303	C/CU	1.0	5					2	2	Fall/59
16	9-16-59	N.Red. Mtn. No. 2 #6005	C/CU	1.5	8					2	2	Fall/59
	Red. Mtn.	N.Red. Mtn. No. 1 #6004	R/CU	0.3	1					2	2	Fall/59
		Yaak #92	S	5.0	1					2	2	Fall/59
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Date 1/28/60

A. Details by Projects

Comp. No.	Purchaser or Sale Name	Road Name and Project No.	Kind of Work	Planned FY 1961		Proposed FY 1962		Proposed FY 1963		Road Survey Type Planned	Date of Completion
				Mi.	Govt. Oper. Coop.	Mi.	Govt. Oper. Coop.	Mi.	Govt. Oper. Coop.		
Young Cr. Pole Good Cr.		Poverty Slope #7210 #7183	C/CU R/S/CU C/CU	2 5 1	8 30 8					2 Complete 50% Complete 50%	Spring/60 Spring/60 Spring/60
		Boulder- Bunkerhill 7184	C/CU	1.5	8					2	Fall/60
		Slick Gulch	C/CU	3.0		18			1	1	Summer/60
Slick Gulch		Gulch #7167	C/CU			3.5				2	Summer/61
		Lost Lake Pink Ridge 3671	C			2	10			2	Summer/61
		U.Slick Gulch 7907	C			2	10			2	Summer/61
		Tepee Lake 7147	C			2	10			2	Summer/61
Upper McGuire		Warex Mtn. 7180	C						2	2	Spring/62
		N. Warex Mtn. #7997	C					1	7	2	Spring/62
		U. McGuire Cr. #8013	C					1	6	2	Spring/62
		Sadiron Slope 7955	C/S			2.5	14			2	Spring/61
Green Mtn.		Cooks Run Gut Cr. No. 1 #7937	C/S			1.5	10			1	Summer/60
		Upper Pink- ham	CU							3	Summer/62
U. Sutton		Sutton Cr. #619	C/R/CU/S			2.5	13			2	Spring/61
Pink Cr.		Pink Cr. #7950	C/S				- 189	6		1	Summer/62



Forest Kootenai Working Circle Kootenai District Rexford Date 1/28/60

A. Details by Projects

[illegible]



TABLE 25 - TIMBER ACCESS ROADS
continued
(Reference FSH 2412.5)

Forest		Kootenai		Working Circle		Kootenai		District		Troy		Date		January 21, 1960	
A. Details by Projects															
Comp. No.	Purchaser or Sale Name	Road Name and Project No.	Kind of Work Planned	Planned FY 1961		Proposed FY 1962		Proposed FY 1963		Road Survey		Date of Completion			
				Mi.	Govt. Oper. Coop. Mi.	Est. Cost. (M\$)	Govt. Oper. Coop. Mi.	Est. Cost. (M\$)	Govt. Oper. Coop. Mi.	Type Planned	Survey Design				
56	Roberts Mt.	S. Side Leonia #229.1	R	2.7	10						Complete				
		Star Cr. #415	R-B	5.0	15	2.5	8				Complete				
		Raymond Cr. #4506	R-B			1.5	4				Complete				
		Star Cr. #415	C			2.0	8				Complete				
		Raymond Cr. #4506	C					.5	3		Complete				
		Raymond Cr. #450	C					1.0	3		Complete				
		Raymond-Star #4503	C					4.5	23		Complete				
60	Smith Mt.	Callahan-Boulder #427	C	.5	5						Complete	1			
		S. Fk. Callahan #414	C-B	5.1	76						Complete	1			
		Smith Mt. #4521	C	3.6	30						Field	3			
63	Briar Cr.	Briar-Cheer #4616	C	1.1	11						Field	3			
64	Spar-Hiatt	#4623	C	2.0	14						Field	3			
50	S. O'Brien	Kedzie-Pulpit #4418	R, C	1.5	2	2.0	14				Field	3			
68-69	Iron Cr.	Iron Cr. #4555	R-B			2.0	10				Field	3			
		Upper Rabbit #4425	C	2.0	1.6	3.5	18	2.5	22.2		Field	1			
49	Rabbit Cr.	O'Brien #2392	C								Field	3			
50	Upper O'Brien	Callahan #427	C			2.5	10				Field	3			
			</												

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TABLE 25 - TIMBER ACCESS ROADS
continued (Reference FSH 2412.5)

Forest	Kootenai	Working Circle	District	Troy	Date	January 21, 1960						
A. Details by Projects												
Comp. No.	Purchaser or Sale Name	Road Name and Project No.	Kind of Planned Work	Planned FY 1961		Proposed FY 1962		Proposed FY 1963		Road Survey Type Planned	Date of Completion	
				Planned Mi.	Govt. Oper. Coop. Mi.	Est. Cost (M\$)	Govt. Oper. Coop. Mi.	Est. Cost (M\$)	Govt. Oper. Coop. Mi.			
60	Upper Goat Creek	N.Fk.Keeler Surprise Dr. #4576	C	3.5	24	1.5	9			1	To do	3/30/61
69	Stanley Ridge	Emma Gulch #4639	C					3.0	2.4	3	Field	6/30/62
64	Twilight Ridge	E.Shore Spar Lake #4631	C					1.0	10	1	To do	3/30/62
60	S. Fork Callahan	U. Stanley Spar Lake #4630	C					1.0	9	1	To do	3/30/62
43	Ferrel Cr.	Glad- S.Callahan #4539	C	1.0				3.0	22	3	Field	5/30/62
45	Feeder Cr.	#2353	R	1.5	4					3	Field	8/30/60
70	China Basin	U.Arbo-Feeder Cr. #2372	C	3.0	11					3	Field	8/30/60
	China Basin	China Mt. #4441	R		23					3	Field	5/30/60
	Logan Creek	S. Side Leonia #229.2	C					4.0	20	1	Field	8/30/61
			R					2.0	14	1	Field	8/30/61
			R					3.0	11.1	1	To do	3/30/62

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TABLE 25 - TIMBER ACCESS ROADS
continued (Reference FSH 2412.5)

Forest		Kootenai		Working Circle		Kootenai		District		Warland		Date		February 1, 1960	
A. Details by Projects															
Comp. No.	Purchaser or Sale Name	Road Name and Project No.	Kind of Planned Work	Planned FY 1961			Proposed FY 1962			Proposed FY 1963			Road Survey Type Planned	Date of Completion C.Y.	
				Mi.	Govt.	Open	Coop.	Mi.	Govt.	Open	Coop.	Mi.			Govt.
108	Ten Mile 11/2/59	Ten Mile #4882	R	1.6		1.0							2	2	6/30/60
111	Dry Fork	S.Cripple H. #4906	C&R	4.8		12.0							2	2	6/30/60
87	Barron Cr. #615	Barron Cr. #615	R & R/W	1.5		4.0							1 - For R/W	2	Completed 5/30/60
109	5 Mile Cr. #48	Five Mile #48	C&R	7.0	2.4	14.1							1	1	7/30/60
		5 Mile-Warland No. 3 #4893	C	6.0	2.2	42.8							2	2	7/30/60
86	N. Jackson #61	N. Jackson #4821	R	6.0	1.0	15.5							1 - for R/W	2	Completed 6/30/60
		U.No. Jackson #4865	R/W										1	None	6/30/60
		Jackson View #6249	R/W										1	None	6/30/60
		Jackson Barron #1 #6250	R/W										1	None	6/30/60
		Jackson Barron #2 #6251	R/W										1	None	6/30/60
		Little Jackson Conn. #1	R/W										1	None	6/30/60
	Jackson Cr. #4869		C	1.3		7.0							2	2	6/30/60

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A. Details by Projects

Comp. No.	Purchaser or Sale Name	Road Name and Project No.	Kind of Work Planned	Planned FY 1961		Proposed FY 1962		Proposed FY 1963		Road Survey		Date of Completion	
				Mi.	Govt. Oper. Coop.	Mi.	Govt. Oper. Coop.	Est. Cost (M\$)	Est. Cost (M\$)	Mi.	Govt. Oper. Coop.		Type Planned
	Warland-Davis	Warland Pk. #4896	C			1.5	12.0				1	1	3/30/61
		Warland Pk. Spur #6285	C			1.0	5.0				2	2	3/30/61
		Warland Pk. Conn. #6286	C					2.0	14.0		1	1	3/30/61
		S. Warland Ridge #4897	C					1.0	5.0		2	2	3/30/61
		Warland Cr. #566	C					1.0	7.0		1	1	3/30/61



TABLE 25 - TIMBER ACCESS ROADS
continued (Reference FSH 2412.5)

Forest		Kootenai		Working Circle		Kootenai		District		Warland		Date February 1, 1960	
A. Details by Projects													
Comp. No.	Purchaser or Sale Name	Road Name and Project No.	Kind of Work Planned	Planned FY 1961		Proposed FY 1962		Proposed FY 1963		Road Survey		Date of Completion	
				Mi.	Govt. Oper. Coop.	Mi.	Govt. Oper. Coop.	Est. Cost (M\$)	Govt. Oper. Coop.	Est. Cost (M\$)	Govt. Oper. Coop.		Type Planned
	S. Zeigler Face	#6240	C&R	1.7	6.0	0.8	2.0			1 - For R/W	2	Completed 5/30/61	
		E. Side Zeigler Mt. #863	C&R	1.0	1.0	1.0	5.0			2			
		Lower Bristow #4853	C&R			3.0	13.0			2	2	5/30/61	
		Zeigler Mt. Conn. #1 #6229	C&R							2	2	5/30/61	
	Tene Mile Stenerson	Zeigler Mt. Loop #6228	C					1.5	6.0	2		5/30/61	
		Everett-Hickory #1 #6238	C					1.0	5.0	2		5/30/61	
		Everett-Hickory #2 #6239	C						1.5	9.0	2		5/30/61
		#856	R/W C&R						1.5	9.0	2		5/30/61
	Hornet Ridge	#6266	C					8.5	3.4	1	1	5/30/62	
		#6264	C					1.5	.6	2	2	5/30/62	
		#525	R&R/W					1.0	.4	2	2	5/30/62	
		#334	R&R/W					6.0	3.0	1	1	6/30/63	
		#4913	R&R/W					0.4	1.0	1	1	6/30/63	
								5.0	3.0	1	1	6/30/63	
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TABLE 25 - TIMBER ACCESS ROADS
continued
(Reference FSH 2412.5)Forest Kootenai Working Circle Kootenai District Yaak-Sylvanite Date 1/29/60

A. Details by Projects

Comp. No.	Purchaser or Sale Name	Road Name and Property No.	Kind of Work	Planned FY 1961		Proposed FY 1962		Proposed FY 1963		Road Survey		Date of Completion
				Planned Mi.	Govt. Oper. Coop. Mi.	Est. Cost (\$)	Govt. Oper. Coop. Mi.	Est. Cost (\$)	Govt. Oper. Coop. Mi.	Type Planned	Survey Design	
3 & 20	Black Top Butte	Beetle Cr. N. Cr. 748	R/CU	3	3					3	3	Summer/60
25	Baldy Mtn.	Zero Cr. 591	R/CU	2	7					Complete		
25	Hellroaring Cedar #2	Hellroaring Mtn. Baldy 5953	C/CU	.4	2					3	3	Summer/60
14	Blacktail Cr. Salvage	Blacktail Cr. 5817	R/CU	3	1					3	3	Summer/60
17	Hudson Cr.	Solo Joe Cr. 92J	C/B							3	3	59
33	S. Fk. Yaak Face	S. Fk. Yaak S. Fk. 878	C/CU/S	2.5	35	18.1	1.3			Completed		59
2	Middle Hawkins Cr.	Flatail S. Fk. Yaak 6114	C/CU/S			6	1	0.6	4	2	2	Summer/63
3	Hawkins Cr. Winkum West Fork	5902 Jungle W. Yaak 5895	C/CU/S	0.5	3					3	3	Summer/61
		5895	R/CU	.5	4					3	3	Summer/60
		Jungle Cr. 5903	R/CU	.2	.2					3	3	Summer/60
		5914	R/CU	.7	.7					3	3	Summer/60
		Davis Loop 523	R/CU/B	.1	.1					3	3	Summer/60
19	Community Hall	Obermayer Yaak Valley W. Side #92	R/CU	.1	.1					Complete		Summer/58
9 & 10	Benifield Cr.	W. Fk. Yaak R. #276.1	C/CU/S	.4	3.4					Completed		Summer/59



TABLE 25 - TIMBER ACCESS ROADS
continued (Reference FSH 2412.5)Forest Kootenai Working Circle Kootenai District Yaak-Sylvanite Date 1/29/60

A. Details by Projects

Comp. No.	Purchaser or Sale Name	Road Name and Project No.	Kind of Work	Planned FY 1961		Proposed FY 1962		Proposed FY 1963		Road Survey		Date of Completion
				Planned Mi.	Govt. Oper. Coop. Mi.	Govt. Oper. Coop. Mi.	Est. Cost (\$)	Govt. Oper. Coop. Mi.	Est. Cost (\$)	Type Planned	Survey Design	
	Beaver Cr.	Vinal Lake #746	C/R	4.0	39					Completed	Completed	Spring/59
		Browning N. Big Cr. 6060	C			2	16			1	1	Spring/61
		Fowler Loop #6073	C			1	8			2	2	Spring/61
	French Cr.	French Cr. #5856	C/B	63	42.6					Completed	Completed	Fall/59
	Lower Hawkins	S.Fk. Hawkins Winkum Cr. #5902	C	1.4	11.6					Completed	Completed	Fall/59
	Upper Spread Hidden Cr.	Hidden Cr. #5948	C/R/B	0.5	4.8					3	3	Summer/60
		Spread-Canuck #339.2	R	4.0	2.0					3	3	Summer/60
	S.Fk. Flat Cool Cr.	Long Mdw. #593	C	4.8	48					1	1	Spring/60
		Burnt-Cool Cr. #472	C	2.2	15.4					1	1	Spring/60
		Otis-Lang Cr. #6087	C			3	18			3	3	Summer/61
	N.Fk.Mdw. Cr.	N.Fk.Mdw. Cr. #5961	C	1.0	3.0					3	3	Summer/60
		N.Mdw. Red Top #5972	C			3	27			3	3	Summer/60
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Date January 29, 1960

[illegible]



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TABLE 25 - TIMBER ACCESS ROADS
continued
(Reference FSH 2412.5)

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Forest Kootenai Working Circle Kootenai District Yaak-Sylvanite Date 1/29/60

A. Details by Projects

Comp. No.	Purchaser or Sale Name	Road Name and Project No.	Kind of Work Planned	Planned FY 1961		Proposed FY 1962		Proposed FY 1963		Road Survey	
				Planned Mi.	Govt. Open Coop. Mi.	Est. Cost. (M\$)	Govt. Oper. Coop. Mi.	Est. Cost. (M\$)	Govt. Oper. Coop. Mi.	Type Planned	Date of Completion
20	Pete Cr. Face	Pete Cr. Whitetail #5930	C/R/CU	.7	2.0					3	Summer/60
		Whitetail Comm. 6134	C/CU/S	2	13.0					2	Summer/60
		Upper White-tail 5932	R/CU	3.1	1.4					3	Summer/58
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The following from the original have not been reproduced:

Curves showing Cubic Volume Per Acre - Age Relationship by Type

Map showing Timber Sales

" " Blocks and Compartments

" " Land Uses Other than Timber

